

SECTION OF FOREIGN MARKETS.

# MANUFACTURERS' RECORD

A WEEKLY SOUTHERN INDUSTRIAL  
RAILROAD AND FINANCIAL NEWSPAPER.

VOL. XL.  
No. 25.

## THE AMERICANIZATION OF ENGLAND.

[New York Journal of Finance.]

Much is heard nowadays of the United States as a world-power, of the commercial supremacy of the republic whose centenary was celebrated not so many years ago, of the influence abroad of American institutions, customs and tendencies; and there are those loyal Americans who deprecate such talk, and speak fondly of that splendid isolation which the nation once enjoyed as of a most desirable treasure which has been lost and never can be regained; for it is admitted by both the enthusiasts who look forward to the rapid domination of the world by Americans and the conservatives who shake their heads sadly and predict that the house of cards will one day fall in ruins, that the nation that Washington and Jefferson and Franklin and the other fathers established is no longer merely a law unto itself, but that it has entered upon a career as a world-power from which it cannot turn back. Just as our indomitable creators of trade are no longer content with the home market, but are engaged in a Titanic struggle with the strongest nations of the earth for commercial supremacy, so are Americans in other lines of work reaching out for new worlds to conquer, and we see them succeeding.

It is but a few years, comparatively, since Englishmen, particularly, spoke with contempt of everything American. With what satire did Dickens write of certain foibles and weaknesses which his keen eye detected in our national life. But today it is noticeable that England is rapidly becoming Americanized. It is an American who is to convert the great underground railway system of London into a modern electrical system of traction, but serious writers show that such examples are really of very little moment in comparison with the drift toward American ideas and customs that is taking place in the mother country. The child is in this case revolutionizing the parent. In business, in society, in polities, this influence is seen and "viewed with alarm" by conservative British sires and granddames.

THE FULL TABLE OF CONTENTS WILL BE FOUND ON PAGE 436.

\$4.00 per year.  
Single Copy  
10 Cents.

Baltimore, January 9, 1902.

RECEIVED  
1902

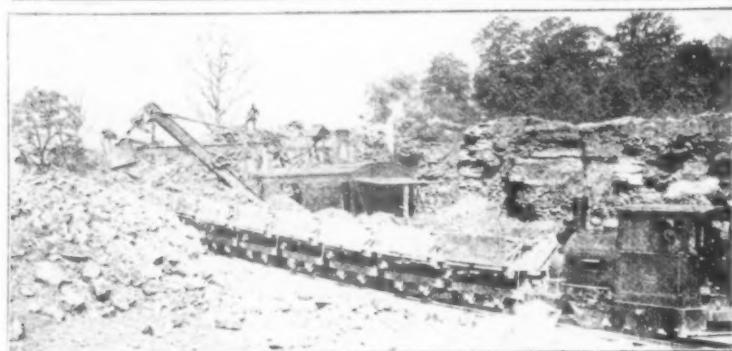
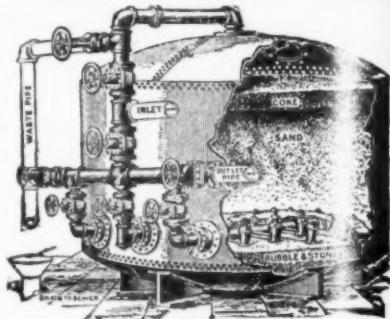
## MANUFACTURERS' RECORD.

# Clean and Wholesome Water.

Cities supplying plenty of clean and wholesome water attract population and every sort of manufacturing enterprise; also necessary for Cotton Mills, Bleacheries, etc. Clear, Bright, Wholesome Water guaranteed in all cases. Write for Catalog.

New York Continental Jewell Filtration Co., 15 Broad St., New York.

40-42 W. Quincy Street, CHICAGO.



## THE MARION STEAM SHOVEL CO.

MANUFACTURERS OF

Steam Shovels, Ballast Unloaders, Dredges and Ditchers, Etc.

We manufacture machinery in this line in all sizes and suitable for all classes of work. Where large capacity is wanted and where exceedingly hard material is encountered, we call special attention to Model "80" and Model "90." We invite the most careful investigation. For full information address

THE MARION STEAM SHOVEL COMPANY,  
MARION, OHIO, U. S. A.,

Or GEO. W. BARNHART, Western Mgr., No 4 Sutter St., SAN FRANCISCO, CAL.

## Interstate Corporation Record

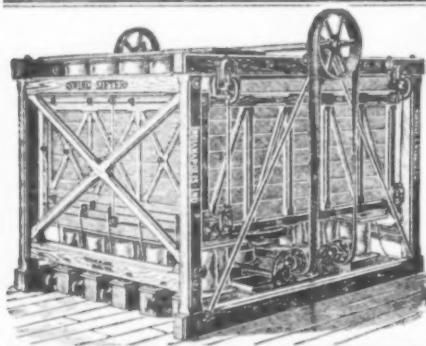
contains Subscription List, Charter, By-Laws, First Meetings, Secretary's Minutes, Certificate, Register and Dividend Records, Stock Ledger.

J. W. MIDDLETON, Publisher, Stationer,

## Stock Certificates, Bonds, Seals.

U. S. LOCK SEAL with Two Keys.

167 Dearborn Street, CHICAGO.



## Mill Machinery...

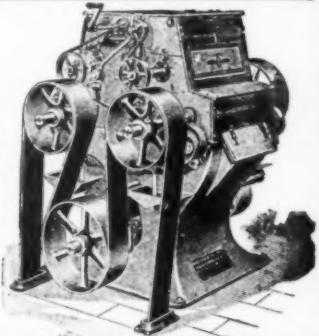
WE BUILD Roller Flour Mills from Custom Mills of small capacity to Mills of the largest capacity. Also small Custom Mills on the Buhr Stone System. 85 sizes and styles of Portable Buhr Stone Mills for all kinds of Grinding. Roller, Corn and Feed Mills, Grain Cleaners, Elevators, Mill Supplies, Bolting Cloth, Etc.

HIGH-GRADE POWER CONNECTIONS, All Kinds.  
PRACTICAL ROPE DRIVES, GEARING.

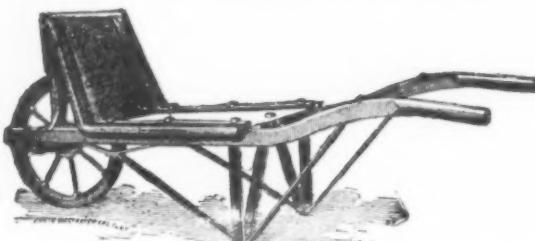
NORDYKE & MARMON CO.,

86 Dey St., Indianapolis Ind., U. S. A.

CORRESPONDENCE SOLICITED.



## ONE PLATE



Pig Metal and Ingot BARROW.

Bed, Front and Front Braces of ONE PLATE.  
HAS NO EQUAL.

LARGELY USED.

JACKSON MFG. CO., Harrisburg, Pa.

Mining Cars. - - -

Wire Rope Thimbles.

## H. M. Corporation Cocks



of proven value are made in many styles.

If you don't care to use wiped joints or want a joint more convenient and just as strong, try the H. M. LEAD FLANGE CORPORATION COCKS, made at Decatur, Ill.

## FOUNDRY

FACINGS,  
SUPPLIES,  
EQUIPMENT.

No Order Too Large for Our Capacity.  
None Too Small for Our Best Attention.

Importers and  
Refiners of

## GRAPHITE AND CEYLON PLUMBAGO

For All Purposes.  
Send for Latest Catalog.

THE HILL & GRIFFITH CO.

Cincinnati, Ohio, U. S. A.



F. A. WALKER, Pres. M. B. FITHIAN, Sec'y.

S. H. SINCLAIR CO.

Manufacturer of

## LAUNDRY MACHINERY.

## "THE COLUMBIA" MODERN LAUNDRY MACHINERY.

Latest. "Up to date." "Prices Right."

Wilson Laundry Machinery Company. Send for Catalog R. COLUMBIA, Pa.

## SHARP'S Latest Styles Ironing & Washing Machinery

Complete Plants Supplied.

ADAMS LAUNDRY MACHINERY CO., 1931-1937 6th Ave., TROY, N. Y.

CARRIAGE, WAGON & TRUCK  
D. WILCOX Mfg. Co.  
Mechanicsburg, Pa.

## FORGINGS.

Recommended By All Who Use Them.

MADE BY

The Kilbourne & Jacobs Mfg. Co.

Barrow Makers.

Columbus, Ohio."

ses  
rial  
in-

AL

5.

2.

1

2"

Best

4.

d

RV

Pa.

ery

2.

Ad  
Carol  
Rob  
Valk  
Ad  
Aud  
Nati  
South  
Ad  
Bush  
Wata  
Woo  
Ad  
Amer  
Ad  
Cog  
Mor  
Nati  
Phil  
Ad  
Far  
Hene  
Ad  
Stan  
Ad  
Clay  
Harr  
Ingr  
Jac  
McK  
Ran  
Smit  
Smit  
Sull  
Ad  
Halt  
Hie  
Hun  
Mer  
Rya  
Ad  
Hie  
Rya  
Ad  
Mai  
Mill  
Pra  
Him  
Wal  
Wh  
Ad  
Am  
Bel  
Eur  
Lou  
Ly  
Sch  
Vinc  
Ad  
John  
Ker  
Cor  
Hal  
B  
B  
Am  
Bai  
B  
Aut  
B  
Lew  
Gon  
Harr  
Harr  
Int  
Lar  
Mai  
Mai  
Mai  
Mc  
Mer  
Mic  
Ric  
The  
Tr  
Wh  
B  
Am  
B  
Ald  
Am  
Bal  
Bie  
Lou  
Ca  
Cle  
Eur  
Fai  
Fai  
Fai  
Fai  
Gra  
Gra  
Lou  
Mai  
Mai  
Mai  
R  
Pai  
Pai  
Pai  
Pai  
Rai  
Rai  
Sai  
Sai  
Tob  
V  
W  
B  
Ad  
Am  
Jai  
Lai  
Tob  
Ad  
Cai  
Rai  
Sai  
Tob  
W  
G  
P  
R  
S  
W  
M  
B  
B

## Classified Index of Advertisers.

For ALPHABETICAL INDEX See Page 31.

## Acid Chambers.

Caroline Iron Works, Baltimore, Md.  
Robertson Mfg. Co., James, Baltimore, Md.  
Valk & Murdoch Iron Works, Charleston, S. C.

## Accountants.

Andt Co. of New York, The New York, N. Y.  
National Promoting & Auditing Co., Boston, Mass.  
Southern Industrial Co., Birmingham, Ala.

## Accumulators.

Bushnell Press Co., G. H., Thompsonville, Conn.  
Watson-Stilwell Co., New York, N. Y.  
Wood, R. D., & Co., Philadelphia, Pa.

## Adding Machines.

American Arithmetron Co., St. Louis, Mo.

## Agent. (Manufacturers and Producers.)

Coggins & McBryde, Baltimore, Md.  
Morrison & Kinderkraut, Richmond, Va.  
National Roofing Supply Co., Wheeling, W. Va.  
Phillips, Edward W., Baltimore, Md.

## Agricultural Implements.

Farquhar Co., Ltd., A. B., York, Pa.  
Hench & Dromgold, York, Pa.

## Air Brakes.

Standard Traction Brake Co., New York, N. Y.

## Air Compressors.

Clayton Air Compressor Works, New York, N. Y.  
Hardie-Tyres Fdy. & Mch. Co., Birmingham, Ala.  
Ingersoll-Sergeant Drill Co., New York, N. Y.  
Jacobson Mfg. Co., Warren, Pa.  
McKinnon Drill Co., New York, N. Y.

## Air Drills.

Hard Drill Co., New York, N. Y.

## Smith Machine Co., H. B., Smithville, N. J.

## Stillwell-Bierer &amp; Smith-Vaile Co., Dayton, O.

## Sullivan Machinery Co., Chicago, Ill.

## Anti-Friction Metals.

Bailey-Lebby Co., Charleston, S. C.  
Hertz, Theo., & Son, St. Louis, Mo.

## Humboldt Metal Works, South Somerville, N. J.

## Merchant &amp; Co., Inc., Philadelphia, Pa.

## Ryan, J. J., &amp; Co., Chicago, Ill.

## Antimony.

Hertz, Theo., & Son, St. Louis, Mo.

## Architects.

Mapespeo, C. E., & Co., Providence, R. I.  
Milburn, Frank F., Columbia, S. C.

## Architectural Iron Works.

American Bridge Co., New York, N. Y.  
Belmont Iron Works, Philadelphia, Pa.

## Eureka Supply Co., Chattanooga, Tenn.

## Lombard Iron Works &amp; Supply Co., Augusta, Ga.

## Lykes, John D., Birmingham, Ala.

## Schreiber, L., &amp; Sons Co., Cincinnati, O.

## Virginia Bridge &amp; Iron Co., Roanoke, Va.

## Asbestos.

Johns, H. W., Mfg. Co., New York, N. Y.

Kearney & Mattison Co., Ambler, Pa.

## Attorneys.

Corder, Edward, Spencer, W. Va.  
Hanlon, Thea. F., Washington, D. C.

## Babbitt Metal. (See Anti-Friction Metal.)

## Bags, Ropes and Twine.

American Mfg. Co., New York City.

Bailey, John T., & Co., Philadelphia, Pa.

## Bagging Machinery. (Automatic.)

Automatic Weighing Mch. Co., Boston, Mass.

## Bankers and Brokers.

Levering, Edg. & Co., Baltimore, Md.

Continental Trust Co., Baltimore, Md.

Hambleton & Co., Baltimore, Md.

Hornaday, J. P., Cincinnati, O.

International Trust Co., Baltimore, Md.

Landis Banking Co., Nashville, Tenn.

Magid, Louis B., & Co., New York, N. Y.

Maryland Trust Co., Baltimore, Md.

Maltby-Hornaday Co., Cincinnati, O.

McKee, Hugh, & Co., Wilmington, N. C.

Merchants & Farmers' Nat'l Bk., Charlotte, N. C.

Middendorf, J. Wm., & Co., Baltimore, Md.

Richmond Trust & Safe Deposit Co., Richmond, Va.

Thomson, Edw. H., & Sons, Baltimore, Md.

Trask, Spencer, & Co., New York, N. Y.

Williams, John L., & Sons, Richmond, Va.

## Bar Iron and Steel.

American Iron & Steel Mfg. Co., Lebanon, Pa.

## Bolting.

Alexander Bros., Philadelphia, Pa.

American Supply Co., Providence, R. I.

Bailey-Lebby Co., Charleston, S. C.

Bickford & Francis Belting Co., Buffalo, N. Y.

Brown & Clegg, N. Y.

Caldwell, W., & Son Co., Chicago, Ill.

Cameron & Bickley Co., Charleston, S. C.

Cleveland Belting & Machinery Co., Cleveland, O.

Eureka Fire Hose Co., New York, N. Y.

Fairbanks Co., Baltimore, Md.

Fayweather & Ladew, New York, N. Y.

Frost, E. M., & Co., Gallon, O.

Gandy Belting Co., Baltimore, Md.

Gibbs & Co., W. H., Columbia, S. C.

Lombard Iron Works & Supply Co., Augusta, Ga.

Main Belting Co., Philadelphia, Pa.

Meier's, Joseph, Sons, New York, N. Y.

Miller Oil & Supply Co., Indianapolis, Ind.

A. J. Car Spring & Autotire Co., Jersey City, N. J.

Pochin, T. E., Philadelphia, Pa.

Peerless Rubber Manufacturing Co., New York, N. Y.

Pittsburg Rubber & Lead Co., Pittsburg, Pa.

Rhoads, J. E., & Sons, Wilmington, Del.

Rossdale, Wm. & Company, Newark, N. J.

Schoeller, W. J., & Co., New York, N. Y.

Shultz Belting Co., St. Louis, Mo.

Textile Mill Supply Co., Charlotte, N. C.

Voorhees Rubber Mfg. Co., Jersey City, N. J.

Williams, I. B., & Sons, Dover, N. H.

## Belting. (Chain.)

Aultman Co., The, Canton, O.

Caldwell, H. W., & Son Co., Chicago, Ill.

Jeffrey Manufacturing Co., Columbus, O.

Link-Bell Engineering Co., Mifflin (Phila.), Pa.

Tate, Jones & Co., Pittsburg, Pa.

## Bolt Fasteners.

American Supply Co., Providence, R. I.

## Bolt Lacing.

Callahan Co., George, New York, N. Y.

Pittsburg Rubber & Leather Co., Pittsburg, Pa.

Rhoads, J. E., & Sons, Wilmington, Del.

Shultz Belting Co., St. Louis, Mo.

## Bolt Preserver.

Callahan Co., George, New York, N. Y.

Pittsburg Rubber & Leather Co., Pittsburg, Pa.

Rhoads, J. E., & Sons, Wilmington, Del.

Shultz Belting Co., St. Louis, Mo.

## Bending Tools. (Angle and Eye.)

Wallace Supply Co., Chicago, Ill.

## Blower. (Argand Steam.)

McClave, Brooks & Co., Scranton, Pa.

## Blowers for Cupolas.

Standard Blower & Pipe Mfg. Co., Hartford, Conn.

## Blowers. (Pressure.)

Allington & Curtis Mfg. Co., Saginaw, E. S. Mich.

American Blower Co., Detroit, Mich.

Boston Blower Co., Hyde Park, Mass.

Buffalo Forge Co., Buffalo, N. Y.

Sturtevant Co., B. F., Boston, Mass.

## Bobbins.

Sheword Bobbin & Mfg. Co., Greensboro, N. C.

## Blowers and Exhaust Fans.

American Blower Co., Detroit, Mich.

Allington & Curtis Mfg. Co., Saginaw, E. S. Mich.

Boston Blower Co., Hyde Park, Mass.

Buffalo Forge Co., Buffalo, N. Y.

Crosby St. Gage & Valve Co., Boston, Mass.

Exeter Machine Works, Exeter, N. H.

Southwick Foundry & Machine Co., Phila., Pa.

Sterling Blower & Pipe Mfg. Co., Hartford, Conn.

Sturtevant Co., B. F., Boston, Mass.

## Boiler Compounds.

International Boiler Compound Co., Chicago, Ill.

## Boilers.

Alexander, Jr., Co., B. B., Charlotte, N. C.

Austin Engine Works, Indianapolis, Ind.

Austinian Co., The, Canton, Ohio.

Babcock & Wilcox Co., New York, N. Y.

Birmingham Boiler Works, Birmingham, Ala.

Brownell & Co., The, Dayton, O.

Cameron & Barkley Co., Charleston, S. C.

Chicago House Wrecking Co., Chicago, Ill.

Clarendon Boiler Works, N. Clarendon, Pa.

Codd Co., E. J., Baltimore, Md.

Eting, Edw. J., Philadelphia, Pa.

Farquhar Co., Ltd., A. B., York, Pa.

Frick Co., Waynesboro, Pa.

Gem City Boiler Co., Dayton, O.

Gibbs, W. H., & Co., Columbus, S. C.

Girard Boiler & Mfg. Co., Girard, O.

Hammond Iron Works, Warren, Pa.

Harrison Safety Boiler Works, Philadelphia, Pa.

Hartley Boiler Works, Montgomery, Ala.

Hazleton Boiler Co., New York, N. Y.

International Power Co., Providence, R. I.

Kellogg Co., E. Williamsport, Pa.

Kellogg, James, Co., Springfield, Ohio.

Link-Belt Engineering Co., Philadelphia, Pa.

Lombard Iron Works & Supply Co., Augusta, Ga.

Lombard Iron Works, Lynchburg, Va.

Morrison & Kinderkraut, Richmond, Va.

Mountain Iron Works Co., Selma, Ala.

Miningerode, Wm., Lynchburg, Va.

Murphy Iron Works Co., Burlington, Iowa.

Petroleum Iron Works Co., Washington, Pa.

Phillips, Edward, Baltimore, Md.

Phoenix Iron Works Co., Meadville, Pa.

Salem Iron Works, Winston-Salem, N. C.

Scaife, Wm. B., & Sons, Pittsburgh, Pa.

Schoelds, J. S., Sons Co., Macon, Ga.

Smith Co., S. Morgan, York, Pa.

Smith-Courtesy Co., Richmond, Va.

Southern Eng. & Boiler Works, Jackson, Tenn.

St. Louis Iron & Machine Works, St. Louis, Mo.

Stevens, Wallis, Co., Ltd., Warren, Pa.

Union Iron Works Co., Selma, Ala.

Valk & Murdoch Iron Works, Charleston, S. C.

Wetherill, Robert, & Co., Chester, Pa.

York Mfg. Co., York, Pa.

## Boilers. (Marine.)

Marine Iron Works, Chicago, Ill.

## Boiler Tube Cleaners.

Challenge Tube Cleaner Co., Lowell, Mass.

## Bolts, Rivets and Nuts.

American Iron & Steel Mfg. Co., Lebanon, Pa.

Miles, Franklin S., Philadelphia, Pa.

Milton Mfg. Co., Milton, Pa.

Hoops & Townsend Co., Philadelphia, Pa.

## Bottling Outfits.

Vilter Mfg. Co., Milwaukee, Wis.

## Brass Goods.

Bailey-Lebby Co., Charleston, S. C.

Besly, Chas. H., & Co., Chicago, Ill.

Buckeye Iron & Brass Works, Dayton, O.

General Fire Extinguisher Co., Providence, R. I.

Ludlow-Saylor Wire Co., The, St. Louis, Mo.

Lunkenhimer Co., Cincinnati, O.

Murchison & Co., Inc., Philadelphia, Pa.

## Breaker Teeth and Links.

Wilcox Mfg. Co., D., Mechanicsburg, Pa.

## Brewers Machinery.

Vilter Mfg. Co., Milwaukee, Wis.

**In Witness Whereof**

D. L. Griggs, Supt.,  
Tremont Temple, Boston,  
Mass., says:

We find that the saving in coal  
during December last year amounts  
to 1946 lbs. daily (counting 30 days  
to the month), and the cost of coal  
thus saved would have been \$75.94.  
To say that we are pleased, only  
half expresses the matter, for besides  
the saving expense we find  
that we can heat the building better  
in an hour than in three or four  
hours before we had the Heintz  
Steam Savers.

These facts to any one interested  
in investigating the merits of the  
Heintz Traps. Booklet

**\$250 SPENT FOR THE HEINTZ DID THIS**

W. S. HAINES CO., 18th & Hamilton Sts., Philadelphia, Pa.

**THE SAFETY**  
**Car Heating & Lighting Co.**  
160 Broadway, New York.

**CAR LIGHTING**

By the Pintsch System.

**CAR HEATING**

By Steam Jacket System,  
Hot Water Circulation,  
Return and Direct Steam  
Systems.

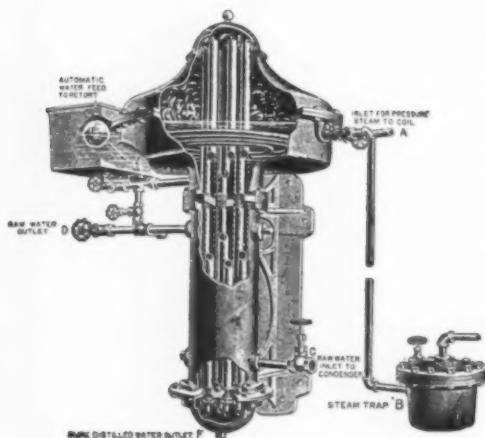
**AUTOMATIC STEAM COUPLERS.**



You don't have to hunt for center in shaft and then for your watch while balancing on a ladder.  
Send \$1 for sample  
Liberal discount  
to the trade.  
Ask your dealer  
for it.  
Builders of Foundry Molding Machines.

THE TABOR MFG. CO.  
18th and Hamilton Sts., Philadelphia, Pa.

**JEWELL STILL,  
Pure Distilled Water (Not a  
Filter)**



This illustration shows the size No. 7 JEWELL STILL. Capacity 15 gallons per hour with 40-lbs. of boiler steam pressure upon the heating coil.

This apparatus should be used for pure drinking water for hospitals, hotels, and laboratory use.

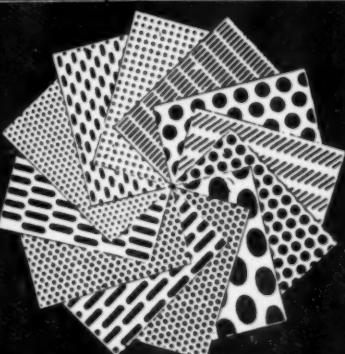
This distilled water is palatable and aerated, and is delivered cold directly from the still.

Advanced practice requires the use of distilled water instead of using a common filter. The Jewell Still works automatically. For further particulars, address

Jewell Water Still Company,  
Marquette Building,  
Chicago, Ill.

FOR  
GRAIN CLEANING  
AND MINING  
MACHINERY.  
WOOLEN, COTTON,  
PAPER AND PULP  
MILLS.  
COTTON SEED OIL,  
RICE AND FLOUR  
MILLS.  
SUGAR AND MALT  
HOUSES.  
DISTILLERIES.  
FILTER PRESSES.  
STONE, COAL  
AND ORE SCREENS.  
BRICK AND TILE  
WORKS.  
FILTERS.  
SPARK ARRESTERS.  
GAS AND WATER  
WORKS.  
OIL, GAS & VAPOR  
STOVES.  
COFFEE  
MACHINERY.  
ETC., ETC.

**PERFORATED  
METALS.**



**STEEL, IRON,  
COPPER, ZINC,  
BRASS, TIN,**  
AND ALL OTHER METALS PERFORATED AS REQUIRED.

STANDARD SIZES  
PERFORATED TIN AND BRASS  
ALWAYS IN STOCK.

The HARRINGTON & KING PERFORATING CO.

MAIN OFFICE AND WORKS, 234 N. UNION ST.,  
CHICAGO, ILLS.

EASTERN OFFICE, 284 PEARL ST., NEW YORK.



**HAHN'S** Latest Improved Watchman's Time Detector,

With Safety Lock Attachment

for 6, 12 or 18 stations. Registering is done by numbers from 1 to 6, 1 to 12 and 1 to 18, each station having its number. Highest award at the World's Fair. Write for full particulars, circulars and prices to

B. NANZ & CO.,

127 Duane St., N. Y.

**The... BOURSE** **Exhibition Department**  
Offers you an opportunity to extend your business.

For full particulars address

Exhibition Department, THE BOURSE, Philadelphia.

**"The Standard" Scales**   
FOR  
Cottonseed Oil Mills, Cotton Gins, Railroads, Mines, Mills, Warehouses PURPOSES.  
Used by the U. S. Government, Leading Railroads and Manufacturers.  
THE STANDARD SCALE & SUPPLY CO., Limited, Manufacturers,  
PITTSBURGH, PA.

**Conveying, Elevating and Power Transmitting Machinery**  
A COMPLETE LINE OF THE BEST.

**Caldwell Helicoid Conveyor!**

**CA AL DA WA EL LAS  
HE LI CO I D**

The only perfect spiral conveyor with continuous flight—no laps or rivets.

Seamless Steel Elevator Buckets, Elevator Boots, Rope Transmission Machinery, Sprocket Wheels, Link Belting, Shafting, Belting, Hangers, Pulleys, Gears, Carpellers, Automatic Power Grain Shovels, Wood Split Pulleys, Wire Cloth, Perforated Metal.

Complete Equipments for handling materials of all kinds.

Western Avenue, 17th to 18th Streets,  
CHICAGO, ILL.

**H. W. CALDWELL & SON COMPANY,**  
Our New Catalogue No. 26 (440 Pages, Cloth Bound,) will be Sent Upon Request.

SOUTH-EASTERN SALES AND ENGINEERING OFFICE, 411 Prudential Building, Atlanta, Ga., W. C. CONANT, Manager.  
SOUTH-WESTERN SALES AND ENGINEERING OFFICE, 206 Trust Building, Dallas, Texas. J. C. VAN ARSDELL, Manager.

## Classified Index of Advertisers. FOR ALPHABETICAL INDEX See Page 31.

**Car Couplers and Knuckles.**  
Chester Steel Castings Co., Philadelphia, Pa.  
Latrobe Steel & Coupler Co., Philadelphia, Pa.  
Safety Car Heating & Lighting Co., New York, N. Y.

**Car Lighting and Heating.**  
Safety Car Heating & Lighting Co., New York, N. Y.

**Car Seats. (Lead.)**  
Hertz, Theo., & Son, St. Louis, Mo.

**Car Wheels, Axles and Trucks.**  
George Fdry. & Mch. Works, Rome, Ga.

Union Iron Works Co., Selma, Ala.

Peacock Iron Works, Selma, Ala.

**Casters and Caster Wheels.**  
Standard Caster & Wheel Co., New York, N. Y.

**Castings. (Brass and Bronze.)**  
George Foundry & Machine Works, Rome, Ga.

Lunkenheimer Co., Cincinnati, O.

Ryan, J. J., & Co., Chicago, Ill.

**Castings. (Aluminum.)**  
Ryan, J. J., & Co., Chicago, Ill.

**Castings. (Iron.)**  
Dinnick Pipe Co., Birmingham, Ala.

George Foundry & Machine Works, Rome, Ga.

Glamorgan Pipe & Foundry Co., Lynchburg, Va.

Lombard Iron Works & Supply Co., Augusta, Ga.

McLanahan-Stone Machine Co., Hollidaysburg, Pa.

Maryland Fdry. & Mch. Co., Baltimore, Md.

Ross-Meehan Fdry. Co., Chattanooga, Tenn.

Smith Co., S. Morgan, York, Pa.

Valley Iron Works, Williamson, Pa.

Westbrooks, J. B. Fdry. & Mch. Co., Danville, Va.

Wood, R. D., & Co., Philadelphia, Pa.

**Castings. (Malleable Iron and Steel.)**  
Chester Steel Castings Co., Chester, Pa.

Hay-Budden Mfg. Co., Brooklyn, N. Y.

Latrobe Steel Co., Philadelphia, Pa.

Norway Iron & Steel Co., York, Pa.

Ross-Meehan Fdry. Co., Chattanooga, Tenn.

York Mfg. Co., York, Pa.

**Cement.**  
American Cement Co., Philadelphia, Pa.

Bonneville Portland Cement Co., Philadelphia, Pa.

Carolina Port. Cement Co., Charleston, S. C.

French, Samuel H., & Co., Philadelphia, Pa.

Garden City Sand Co., Chicago, Ill.

Gilbert, C. M., & Co., Savannah, Ga.

Hartranft Cement Co., Wm. G., Philadelphia, Pa.

Kelley Limestone & Transport Co., Cleveland, O.

Mobile and Omega, Inc., Baltimore, Md.

Mobile Coal Co., Mobile, Ala.

Southeastern Lime & Co. Co., Charleston, S. C.

Warner Co., Chas., Wilmington, Del.

**Cement. (Rubber Roof-Steam Joint and Pipe.)**

Callahan Co., George, New York, N. Y.

**Chain Hoists.**  
Spedel, J. G., Reading, Pa.

**Chains.**  
Greenwald Co., J. & E., Cincinnati, O.

Jeffry Mfg. Co., The, Columbus, O.

Link-Belt Engineering Co., Philadelphia, Pa.

N. J. Foundry & Machine Co., Plainfield, N. J.

**Charcoal. (Filtering.)**  
Obermayer Co., S., Cincinnati, O.

**Chemicals.**  
Carbondale Chemical Co., Carbondale, Pa.

**Chemists.**  
Gatlett, Chas., Staunton, Va.

Froehling, Dr. Henry, Richmond, Va.

Pratt Laboratory, N. P., Atlanta, Ga.

**Chloride of Calcium.**  
Carbondale Chemical Co., Carbondale, Pa.

**Chucks.**  
Bally, Chas. H., & Co., Chicago, Ill.

Morse Twist Drill & Machine Co., New Bedford, Mass.

Skinner Chuck Co., New Britain, Conn.

Whiton Machine Co., D. E., New London, Conn.

**Chucks. (Spinning.)**  
Hay-Budden Mfg. Co., Brooklyn, N. Y.

**Clamps.**  
Bally, Chas. H., & Co., Chicago, Ill.

Imhauer & Co., E., New York City.

Sanz, B., & Co., New York, N. Y.

Textile, Mill & Supply Co., Charlotte, N. C.

**Clamps.**  
Bally, Chas. H., & Co., Chicago, Ill.

**Coal.**  
Alabama Con. Coal & Iron Co., Birmingham, Ala.

Castor, Curran & Bullitt, Philadelphia, Pa.

Crooked Fork Coal & Coke Co., Petros, Tenn.

Davis Coal & Coke Co., Philadelphia, Pa.

Jacoby, W. F., & Co., Philadelphia, Pa.

Mobile Coal Co., Mobile, Ala.

**Coal-Handling Machinery.**  
Aultman Co., Canton, O.

Exter Machine Works, Pittston, Pa.

Hunt, Co., C. W., West New Brighton, N. Y.

Jeffrey Mfg. Co., Columbus, O.

Link-Belt Engineering Co., Philadelphia, Pa.

Robinson Machine Co., Monongahela, Pa.

Simpson Mfg. Co., Chicago, Ill.

Stuebner Iron Works, G. L., Long Island City, N. Y.

**Coal Tar Products.**  
Barrett Mfg. Co., Philadelphia, Pa.

**Coke.**  
Alabama Con. Coal & Iron Co., Birmingham, Ala.

Crooked Fork Coal & Coke Co., Petros, Tenn.

Davis Coal & Coke Co., Philadelphia, Pa.

Jacoby, W. F., & Co., Philadelphia, Pa.

**Commutators. (Bars and Segments.)**  
Tower-Binford Electric & Mfg. Co., Richmond, Va.

**Compressed Air Locomotives. (See Locomotive Builders.)**

**Concentrating Plants.**  
Cresson Co., Geo. V., New York, N. Y.

**Concrete Mixers.**  
New Jersey Foundry & Machine Co., Plainfield, N. J.

Ransome & Smith Co., N. Y.

**Contractors. (Paving, etc.)**  
Robinson Contracting Co., Geo. A., Mobile, Ala.

**Contractors. (Railway.)**  
Smehurst & Allen, Philadelphia, Pa.

**Contractors and Builders.**  
Chapman, Wm. A., & Co., Providence, R. I.

Railways & Light Co. of America, Balt., Md.

Speir, W. E., Washington, D. C.

**Contractors. (Mine-Machinery and Supplies.)**  
Aultman Co., The, Canton, O.

Austin Manufacturing Co., F. C., Harvey, Ill.

Contractors' Plant Mfg. Co., Buffalo, N. Y.

Kilbourne & Jacobs Mfg. Co., Columbus, O.

Mates Co., The, Cincinnati, O.

Marion Steam Shovel Co., Marion, O.

Peacock Iron Works, Selma, Ala.

Schaefer, W. J., & Co., New York, N. Y.

**Conveying Machinery.**  
Aultman Co., The, Canton, O.

Caldwell, H. W., & Son Co., Chicago, Ill.

Crescent Co., Geo. V., New York, N. Y.

Exter Machine Works, Pittston, Pa.

Hunt, Co., C. W., West New Brighton, N. Y.

Jeffrey Mfg. Co., The, Columbus, O.

Lidgerwood Mfg. Co., New York, N. Y.

Link-Belt Engineering Co., Nicetown (Phila.), Pa.

McLanahan-Stone Machine Co., Hollidaysburg, Pa.

N. J. Foundry & Machine Co., Plainfield, N. J.

Robinson Machine Co., Monongahela, Pa.

Simpson Mfg. Co., Chicago, Ill.

State, Jones & Pittsburg, Pa.

Sterling Blower & Pipe Mfg. Co., Hartford, Conn.

United Telpelphone Co., New York City.

**Cop and Skein Winders.**  
Snyder, H. P., Mfg. Co., Little Falls, N. Y.

**Copper.**  
Hertz, Theo., & Son, St. Louis, Mo.

Merchant & Co., Inc., Philadelphia, Pa.

Ryan, J. J., & Co., Chicago, Ill.

**Cottoners.**  
Badger, E. B., & Sons Co., Boston, Mass.

Birmingham Boiler Works, Birmingham, Ala.

McMillan Bros. Co., Mobile, Ala.

**Core Drilling Machinery.**  
C. F. Prestler Mfg. Co., Cincinnati, O.

**Core Ovens.**  
Millet Core Oven Co., Brightwood, Mass.

**Cordage.**  
American Mfg. Co., New York, N. Y.

**Corn-Mill Machinery.**  
Nordyke & Marmon Co., Indianapolis, Ind.

Sprout, Waldron & Co., Worcester, Pa.

**Cotton Goods.** (Commission Merchants.)  
Jacobs, M. R., New York, N. Y.

**Cotton Oil.**  
American Cotton Oil Co., New York, N. Y.

Cotton Oil & Fibre Co., Philadelphia, Pa.

Southern Cotton Oil Co., New York, N. Y.

**Cotton Yarns.** (Commission Merchants.)  
Blythe, Richard E., Philadelphia, Pa.

Buckingham, Paulson & Co., Philadelphia, Pa.

**Cotton-Gin Machinery.**

Carver Cotton Gin Co., E. Bridgewater, Mass.

Crutchedfield, J. H., Atlanta, Ga.

Valk & Murdoch Iron Works, Charleston, S. C.

Van Winkle Gin & Machine Works, E., Atlanta, Ga.

**Cotton-Mill Machinery & Supplies.**

American Supply Co., Providence, R. I.

Atherton Machine Co., A. T., Pawtucket, R. I.

Cohoes Iron Foundry & Machine Co., Cohoes, N. Y.

Draper Co., Hopedale, Mass.

Fairmount Machine Co., Philadelphia, Pa.

Kilburn, Lincoln & Co., Fall River, Mass.

Lowell Machine Shop, Boston, Mass.

Mason Machine Works, Taunton, Mass.

Robbins, O. A., Charlotte, N. C.

Sherwood Bobbin & Mfg. Co., Greensboro, N. C.

Snyder, H. P., Mfg. Co., Little Falls, N. Y.

Textile Mill Supply Co., Charlotte, N. C.

Whitinsville Spin, Bing Co., Whitinsville, Mass.

**Cottonseed-Oil Machinery.**

Alding Co., J. R., Inc., Brooklyn, N. Y.

Buckeye Iron & Brass Works, Dayton, Ohio.

Bushnell Press Co., G. H., Thompsonville, Ct.

Cardwell Machine Co., Richmond, Va.

Carver Cotton Gin Co., E. Bridgewater, Mass.

Columbus Machinery Co., The, Columbus, Miss.

Crutchedfield, J. H., Atlanta, Ga.

Foss Mfg. Co., Springfield, O.

Sprout, Waldron & Co., Muncy, Pa.

Sturtevant Mill Co., Boston, Mass.

Walker, Elliott, Wilmington, Del.

West Pulverizing Machine Co., New York, N. Y.

**Crushers. (Corn and Cob.)**

Brown Co., A. & F., New York, N. Y.

Foss Mfg. Co., The, Springfield, Ohio.

Simpson Mfg. Co., Chicago, Ill.

Sprout, Waldron & Co., Muncy, Pa.

Sturtevant Mill Co., Boston, Mass.

Wolf Co., The, Chambersburg, Pa.

**Cupola Furnaces.**

Obermayer, S., Co., Cincinnati, O.

**Cutterheads. (Woodworking.)**

Shimer, Samuel J., & Sons, Milton, Pa.

**Dado Heads.**

Hether Bros., Rochester, N. Y.

**Dam Builders-Hydraulic Surveyors.**

Beardsley Gravity Dam & Con. Co., Elkhart, Ind.

**Designers and Builders of Steel Buildings.**

Schrieber, The L., & Sons Co., Cincinnati, O.

**Designers and Illustrators.**

Acme Photo-Engraving Co., Baltimore, Md.

**Dies for Sheet-Metal Workers.**

Bally, Chas. H., & Co., Chicago, Ill.

Fairbanks Co., Baltimore, Md.

Leffler, Chas., & Co., Brooklyn, N. Y.

Niagara Machine & Tool Works Buffalo, N. Y.

**Die Forgings and Castings.**

Hay-Budden Mfg. Co., Brooklyn, N. Y.

**Draughtsmen, Engineers' Supplies.**

Weber, F. & Co., Philadelphia, Pa.

**Dredges and Excavators.**

Austin Mfg.



## Classified Index of Advertisers.

For ALPHABETICAL INDEX See Page 31.

**Drilling Machines.**  
American Tool Works Cincinnati, O.  
Barnes Co., W. F. & John, Rockford, Ill.  
Bickford Drill & Tool Co., The, Cincinnati, O.

**Drop Forgings.**  
Wilcox Mfg. Co., D., Mechanicsburg, Pa.

**Dry-Kilns.**  
American Blower Co., Detroit, Mich.  
Boston Blower Co., Hyde Park, Mass.  
Sturtevant Co., B. F., Boston, Mass.

**Dumbwaiters.**

Spedel, J. G., Reading, Pa.

**Drying Machinery.**

Aising Co., Inc., J. R., Brooklyn, N. Y.  
American Blower Co., Detroit, Mich.  
Bailey-Lebby Co., The, Charlestown, S. C.  
Crown Dryer Co., Cleveland, O.  
Jeffrey Mfg. Co., The, Columbus, O.  
Eggles-Coles Engineering Co., New York, N. Y.  
Sturtevant Co., B. F., Boston, Mass.

West Pulverizing Machine Co., New York, N. Y.

**Dust-Collecting System.**

Allington & Curtis Mfg. Co., Saginaw, E. S. Mic  
Sterling Blower & Pipe Mfg. Co., Hartford, Conn.

**Dyeing Machinery.**

Fairmount Machine Co., Philadelphia, Pa.

Klauder-Weldon Co., Amsterdam, N. Y.

**Dynamos and Motors.**

Alexander, Jr., Co., S. B., Charlotte, N. C.  
Commercial Electric Co., Indianapolis, Ind.  
Crocker-Wheeler Co., Amherst, N. J.  
Electrical Material Co., Baltimore, Md.  
General Electric Co., Schenectady, N. Y.  
Guarantee Electric Co., Chicago, Ill.  
Kentucky Electric Co., Owensboro, Ky.  
New Jersey Foundry & Machine Co., Plainfield, N. J.  
Northern Electrical Mfg. Co., Madison, Wis.  
Ridgway Dynamco & Engine Co., Ridgway, Pa.  
Smethurst & Allen, Philadelphia, Pa.  
Smith, Samuel J., & Co., Charlotte, N. C.  
Stanley Electric Mfg. Co., Pittsfield, Mass.  
Tower-Binford Elec. & Mfg. Co., Richmond, Va.  
Triumph Electric Co., Cincinnati, O.  
Westinghouse Elec. & Mfg. Co., Pittsburgh, Pa.

**Electric Contractors.**

Alexander, Jr., S. B., Co., Charlotte, N. C.  
Electric Supply Co., Savannah, Ga.  
Jenks, W. H., Richmond, Va.  
Northern Elec. Mfg. Co., Madison, Wis.  
Stanley Elec. Mfg. Co., Pittsfield, Mass.  
Tower-Binford Elec. & Mfg. Co., Richmond, Va.  
Upton, W. P., Co., Washington, D. C.

**Electrical Instruments.**

Electrical Material Co., Baltimore, Md.  
Northern Electric Supply Co., Madison, Wis.  
Stanley Electric Mfg. Co., Pittsfield, Mass.

**Electric-Light and Power Plants.**

Alexander, Jr., Co., S. B., Charlotte, N. C.  
Commercial Electric Co., Indianapolis, Ind.  
Crocker-Wheeler Co., Amherst, N. J.  
Electrical Material Co., Baltimore, Md.  
General Electric Co., Schenectady, N. Y.  
N. J. Foundry & Machine Co., Plainfield, N. J.  
Northern Electrical Mfg. Co., Madison, Wis.  
Ridgway Dynamco & Engine Co., Ridgway, Pa.  
Smethurst & Allen, Philadelphia, Pa.  
Stanley Electric Mfg. Co., Pittsfield, Mass.  
Tower-Binford Elec. & Mfg. Co., Richmond, Va.  
Triumph Electric Co., Cincinnati, O.  
Westinghouse Elec. & Mfg. Co., Pittsburgh, Pa.

**Electric Railroad Equipment.**

Alexander, Jr., Co., S. B., Charlotte, N. C.  
Electrical Material Co., Baltimore, Md.  
General Electric Co., Schenectady, N. Y.  
Northern Electrical Mfg. Co., Madison, Wis.  
Ridgway Dynamco & Engine Co., Ridgway, Pa.  
Smethurst & Allen, Philadelphia, Pa.  
Stanley Electric Mfg. Co., Pittsfield, Mass.  
Tower-Binford Elec. & Mfg. Co., Richmond, Va.  
Triumph Electric Co., Cincinnati, O.  
Upton, W. P., Co., Washington, D. C.  
Westinghouse Elec. & Mfg. Co., Pittsburgh, Pa.

**Electrical Repairs.**

Alexander, Jr., Co., S. B., Charlotte, N. C.  
Electric Supply Co., Savannah, Ga.  
Guarantee Electric Co., Chicago, Ill.  
Kentucky Electrical Co., Owensboro, Ky.  
Smith, Samuel J., & Co., Charlotte, N. C.  
Tower-Binford Elec. & Mfg. Co., Richmond, Va.

**Electrical Supplies.**

Alexander, Jr., Co., S. B., Charlotte, N. C.  
Electrical Material Co., Baltimore, Md.  
Electric Supply Co., Savannah, Ga.  
General Electric Co., Schenectady, N. Y.  
Guarantee Electric Co., Chicago, Ill.  
Jenks, W. H., Richmond, Va.  
Johns Mfg. Co., H. W., New York, N. Y.  
Kentucky Electrical Co., Owensboro, Ky.  
Northern Electrical Mfg. Co., Madison, Wis.  
Smith, Samuel J., & Co., Charlotte, N. C.  
Stanley Electric Mfg. Co., Pittsfield, Mass.  
Tower-Binford Elec. & Mfg. Co., Richmond, Va.  
Triumph Electric Co., Cincinnati, O.  
Western Electrical Supply Co., St. Louis, Mo.  
Westinghouse Elec. & Mfg. Co., Pittsburgh, Pa.

**Electric Locomotives. (See Locomo. Bldrs.)**

**Electric Trucks.**

Baldwin Locomotive Works, Philadelphia, Pa.

**Electrotypers.**

American Type Founders Co., Baltimore, Md.

Spencer & Hall, Baltimore, Md.

**Elevators.**

Albro-Clem Elevator Co., Philadelphia, Pa.

Aultman Co., The, Canton, O.

Bartlett, Hayward & Co., Baltimore, Md.

Bates' James, Sons, Baltimore, Md.

Curran, Jas. H., Elevator Co., Cincinnati, O.

Fairmount Machine Co., Philadelphia, Pa.

Fauns, Le Roy Co., Baltimore, Md.

Link-Belt Engineering Co., Philadelphia, Pa.

Maryland Foundry & Machine Co., Baltimore, Md.

Morse, William, & Co., Philadelphia, Pa.

Park Mfg. Co., The, Indianapolis, Ind.

Parsons, G. H., Reading, Pa.

Union Elevator & Machine Co., Chicago, Ill.

Westbrooks, J. B., Edy & Mch. Co., Danville, Va.

**Elevator Buckets.**

Caldwell, H. W., & Son, Chicago, Ill.

Greenwald Co., I. & E., Cincinnati, O.

Jeffrey Mfg. Co., Columbus, O.

Link-Belt Engineering Co., Philadelphia, Pa.

Tate, Jones & Co., Pittsburgh, Pa.

**Elevator Enclosures and Cabs.**

Balderson, H., & Son, Baltimore, Md.

Bolles, J. M., Iron & Wire Works, Detroit, Mich.

Dow Wire Work Co., Louisville, Ky.

Dufur & Co., Baltimore, Md.

Inglis, Wm., Wire & Iron Works, Detroit, Mich.

Ludlow-Saylor Wire Co., St. Louis, Mo.

Myers Mfg. Co., The Fred J., Hamilton, O.

**Elevator Rope. (See Wire Rope.)**

**Emery.**

Carborundum Co., The, Niagara Falls, N. Y.

Scranton Corundum & Emery Wheel Co., Scranton, Pa.

Tanite Co., The, Stroudsburg, Pa.

**Emery Wheels. (See Grinding and Polishing Machinery.)**

Alber & Byrne, Birmingham, Ala.

Adams, Henry, Baltimore, Md.

American Bridge Co., New York, N. Y.

American Engineering Works, Chicago, Ill.

Bianston, Jr., E. A., Philadelphia, Pa.

Collier & Brown, Atlanta, Ga.

Erikson, Edw. E., Pittsburgh, Pa.

Green, Wm. M., Birmingham, Ala.

Hall, Charles A. M. E., Mobile, Ala.

Hutton Engineering Co., Lexington, Va.  
Kennedy, Walter, Pittsburgh, Pa.  
Lederer, Frank, Atlanta, Ga.  
Marrow, W. D., Hammond, Charlotte, N. C.  
Morgan & Kindervater, Richmond, Va.  
Nicol, T. W., Mobile, Ala.  
Northern Elec. Mfg. Co., Madison, Wis.  
Perry, Nathaniel V., Atlanta, Ga.  
Pratt & Boltwood, Chapel Hill, N. C.  
Pratt Laboratory, N. P., Atlanta, Ga.  
Railways & Light Co. of America, Balti, Md.  
Reid, Thorburn, New York, N. Y.  
Risdon-Alcott Turbine Co., Mount Holly, N. J.  
Robinson Contracting Co., Geo. A., Mobile, Ala.  
Smith & Co., F. L., New York, N. Y.  
Stanley Elec. Mfg. Co., Pittsfield, Mass.  
Tower-Binford Elec. & Mfg. Co., Richmond, Va.  
Upton, W. P., Co., Washington, D. C.  
Virginia Bridge & Iron Co., Roanoke, Va.  
Wetherow, Jas. P., Pittsburgh, Pa.

**Engines.**  
Alexander, Jr., Co., S. B., Charlotte, N. C.  
American Blower Co., Detroit, Mich.  
Atlas Engine Works, Indianapolis, Ind.  
Ball Engine Co., The, Erie, Pa.  
Ball & Wood Co., New York, N. Y.  
Boston Blower Co., Hyde Park, Mass.  
Brownell & Co., The, Dayton, O.  
Buffalo Forge Co., Buffalo, N. Y.  
Cameron & Barkley Co., Charleston, S. C.  
Chicago House Wrecking Co., Chicago, Ill.  
Erie Pump & Engine Co., Erie, Pa.  
Ferguson, A. B., Lt., New York, Pa.  
Frick Co., Waycross, Ga.  
Gibbs, W. H., & Co., Columbia, S. C.  
Greenwald Co., I. & E., Cincinnati, O.  
Hardie-Tynes Edy, & Mch. Co., Birmingham, Ala.  
Harrisburg Edy & Mch. Works, Harrisburg, Pa.  
High Point Machine Works, High Point, N. C.  
Hill, W. E., & Co., Kalamazoo, Mich.  
International Power Co., Providence, R. I.  
Leffel, James, & Co., Springfield, O.  
Lidgewood Mfg. Co., New York, N. Y.  
Lombard Iron Works & Supply Co., Atlanta, Ga.  
McClave, Hamilton & Rimmer, New York, N. Y.  
McIntosh, Seymour & Co., New York, N. Y.  
Murray Iron Works Co., Burlington, Iowa.  
Mecklenburg Iron Works, Charlotte, N. C.  
Minnigerode, Wm., Lynchburg, Va.  
Newport News Shipbldg. & Dry Dock Co., N. News, Va.  
Phillips, Edward W., Baltimore, Md.  
Phoenix Iron Works Co., Meadville, Pa.  
Powerhouse Machine Co., Wilmington, Del.  
Ridgway Dynamco & Engine Co., Ridgway, Pa.  
Salem Iron Works, Winstons-Salem, N. C.  
Schofield, J. S., Sons Co., Macon, Ga.  
Smith-Courtney Co., Richmond, Va.  
Southern Eng. & Boiler Works, Jackson, Tenn.  
Southward Foundry & Machine Co., Philadelphia, Pa.  
St. Louis Iron & Machine Works, St. Louis, Mo.  
Struthers, Wells & Co., Warren, Pa.  
Sturtevant, E. F., Boston, Mass.  
Union Iron Works Co., Selma, Ala.  
Valk & Murdoch Iron Works, Charleston, S. C.  
Valley Iron Works, Williamsport, Pa.  
Vilier Mfg. Co., Milwaukee, Wis.  
Wetherill, Robert, & Co., Chester, Pa.  
Westinghouse Machine Co., Pittsburgh, Pa.  
York Mfg. Co., York, Pa.

**Engines. (Gas and Gasoline.)**  
Blakeslee Mfg. Co., The, Birmingham, Ala.  
Columbus Machine Co., Columbus, O.  
Fairbanks Co., Baltimore, Md.  
Olds Motor Works, Detroit, Mich.  
Otto Gas Engine Works, Philadelphia, Pa.  
Struthers, Wells & Co., Warren, Pa.  
Westinghouse Machine Co., Pittsburgh, Pa.

**Engines. (Gas and Kerosene.)**

Mietz, A., New York, N. Y.

**Engines. (Oil.)**

Aultman Co., The, Canton, O.

**Engravers.**

Acme Photo-Engraving Co., Baltimore, Md.  
Alpha-Photo Engraving Co., Baltimore, Md.

Baltimore Engraving Co., Baltimore, Md.

Middleton, J. W., Chicago, Ill.

**Exhaust Heads.**

Bonar James, & Co., Pittsburgh, Pa.

Burt Mfg. Co., Akron, O.

Stirling Blower & Pipe Mfg. Co., Hartford, Conn.

**Expansion Bolts.**

New Jersey Foundry & Machine Co., Plainfield, N. J.

**Fans. (Electric.)**

Electrical Material Co., Baltimore, Md.

**Fans. (Ventilating.)** [See Blowers, Exhaust Fans.]

**Feed-Water Heaters and Purifiers.**

Berryman, Jas., Philadelphia, Pa.

Bonar, James, & Co., Pittsburgh, Pa.

Bonar, James, & Co., Philadelphia, Pa.

Green City Boiler Co., Dayton, O.

Green Fuel Economizer Co., Matteawan, N. Y.

Greenwald Co., I. & E., Cincinnati, O.

Harrison Safety Boiler Works, Philadelphia, Pa.

Kelly, Jas. J., & Son, New York, N. Y.

McDonald Pipe Bending Co., New Haven, Conn.

Park Mfg. Co., Charlotte, N. C.

Patterson, Frank L., New York, N. Y.

Phillips, E. W., Baltimore, Md.

Phoenix Iron Works Co., Meadville, Pa.

Scaife, Wm. B., & Sons, Pittsburgh, Pa.

Stilwell-Biers & Smith-Vale Co., Dayton, O.

Taunton Locomotive Mfg. Co., The, Taunton, Mass.

Warren Webster Co., Camden, N. J.

**Felting. (Hair.)**

Bader, Adamson & Co., Philadelphia, Pa.

**Fencing. (Iron and Wire.)**

Balderton, H., & Son, Baltimore, Md.

Boiles Iron & Wire Works, J. E., Detroit, Mich.

Dow Wire Works Co., Louisville, Ky.

Dufur & Co., Baltimore, Md.

Eureka Supply Co., Chattanooga, Tenn.

Inglis, Wm., Wire & Iron Works, Detroit, Mich.

Ludlow-Saylor Wire Co., St. Louis, Mo.

New Jersey Wire Cloth Co., Trenton, N. J.

**Fertilizer Machinery. (See Phosphate Mch.)**

Filles, (Iron and Wire.)

Barnett Co., G. & H., Philadelphia, Pa.

Bealy, Chas. H., & Co., Chicago, Ill.

Miller Oil & Supply Co., Indianapolis, Ind.

Watson, N. A., Erie, Pa.

**Filters. (Water.)**

Hamm & Iron Works, Warren, Pa.

Kennicott Water Softener Co., Chicago, Ill.

N.Y. Continental Jewell Filtration Co., New York, N. Y.

Seale, Wm. B., & Sons, Pittsburgh, Pa.

Textile Mill Supply Co., Charlotte, N. C.

**Filter Presses.**

Johnson, J. & Co., New York, N. Y.

Shilwell-Biers & Smith-Vale Co., Dayton, O.

**Fire-Brick.**

Carolina Fire-Brick Works, Killian, S. C.

Garden City Fire-Brick Co., Chicago, Ill.

Ohio Fire-Brick Co., Oak Hill, O.

Pomona Terra Cotta Co., Pomona, N. C.

Powhatan Clay Mfg. Co., Richmond, Va.

Reed-Hammond Fire-Brick Co., Bolivar, Pa.

Stevens, H., Sons Co., Macon, Ga.

**Fire Extinguishers.**

Childs Co., O. J., Utica, N. Y.

**Fire Extinguishers. \***

Childs Co., O. J., Utica, N. Y.

**Fire Extinguishers. \***

Childs Co., O. J., Utica, N. Y.

**Fire Extinguishers. \***

Childs Co., O. J., Utica, N. Y.



Established  
1883.

**HIGH GRADE PORTLAND CEMENT,  
FIRE BRICK AND GENERAL  
BUILDING SUPPLIES.**  
McKELVEY CONCRETE MIXERS.  
Members of Builders' and Traders' Exchange.  
Builders' Club.  
THE GARDEN CITY SAND CO.  
1201 to 1205 Security Building,  
Long Distance 'Phone. Chicago.

### Highest Award Buffalo Exposition,

**GOLD MEDAL,**

AWARDED TO

The American  
Cement Co.

22 S. 15th St.

PHILADELPHIA, PA.

FOR THEIR

**"GIANT" PORTLAND CEMENT,**

The OLD RELIABLE American Brand.

**"It has more  
than fulfilled  
your promises."**

That is the manner in which a buyer of one of our mixers wrote us a few months ago. We claim that our mixers turn out a concrete unsurpassed in quality, and at the lowest possible cost. The records made by the machines while in operation substantiate our claims. Mixers that can fulfill such promises as we make for our products, are machines worthy of your consideration. We invite your correspondence. All inquiries gladly answered.

**RANSOME & SMITH CO.**

Designers and Manufacturers of Concrete Machinery,  
Bowling Green Bldg., 11 Broadway, New York City.

**MARYLAND CEMENT CO.**

MANUFACTURERS OF

### Highest Grade Portland Cement.

OFFICE:  
Builders' Exchange, Baltimore, Md.

WORKS:  
Sparrows Point, Maryland.

**WE SELL** more than one-half the **FIRE BRICK FOR COKE OVENS** in the United States. This one fact is sufficient to prove the quality of our product.

**REESE-HAMMOND FIRE BRICK CO.**

General Office and Works, Bellville, Pa.

Branch Office, Bissell Block, Pittsburg, Pa.

**ALABAMA CONSOLIDATED COAL & IRON CO.**

BIRMINGHAM, ALA

Manufacturers of the Celebrated Brands of  
FOUNDRY IRON:

# "Clifton" and "Etowah"

Also Miners and Shippers of HIGH-GRADE STEAM  
COAL, and Makers of the Well Known  
"STANDARD" FOUNDRY COKE.

Selling Agents for the North  
and West:  
MATTHEW ADDY & CO.  
MOBILE COAL CO., Agents for Coal and Coke in the Mobile Territory.

CINCINNATI, CHICAGO, ST. LOUIS,  
PITTSBURGH, PHILADELPHIA,  
NEW YORK.

**DAVIS COAL AND COKE CO.**  
MINERS AND SHIPPERS

DAVIS LOCOMOTIVE, STEAM AND SMITHING COALS,  
Sole Agent for  
Elk Garden **Big Vein Cumberland Coal.**

DAVIS COKE FOR ORE SMELTERS, FOUNDRIES,  
AND FAMILY USE.

Shipments to all points accessible to rail or water.

**BALTIMORE. PHILADELPHIA. NEW YORK. BOSTON.**

### LEHIGH Portland Cement



High Tensile Strength, Finely Ground,  
Light and Uniform in Color.

Southern and Western Distributors:  
**THE KELLEY ISLAND LIME  
& TRANSPORT CO.**  
CLEVELAND, OHIO.

Works Established 1868.



**Star Portland Cement**

A Perfect Cement for Engineers.  
Used extensively on some of the most important  
work in the U. S.

**Bonneville Portland Cement Co.**  
Office, 604-5 Fidelity Bldg., Philadelphia.  
Works, Siegfried, Pa.

**CHICKAMAUGA CEMENT CO.**

Rossville, Ga.

Manufacturers of

### Hydraulic Rock Cement



**SOUTHEASTERN LIME & CEMENT CO.**

Southern Distributing Agents,

CHARLESTON, S. C.

WORKS, Rossville, Ga.

OFFICE, 276 East Bay, Charleston, S. C.

IMPORTERS

**PORTLAND CEMENT.**

C. M. GILBERT & CO., SAVANNAH, GA.

### Copper Works.



Turpentine Stills,  
And General Metal Workers.

### Pocahontas Coal

SMOKELESS, SEMI-BITUMINOUS.

Is the Standard Steam Fuel for the World.

**CASTNER, CURRAN & BULLITT, Sole Agents, PHILADELPHIA.**

BRANCH OFFICES.

1 Broadway, New York. 70 Kilby Street, Boston, Mass. Citizens Bank Bldg., Norfolk, Va. 4 Fenchurch Avenue, London, England.

**LIMOID**  
A Prepared Lime

Ready for immediate use. No loss  
by air slacking. As safe and  
convenient as cement.

**CHARLES WARNER COMPANY,**  
NEW YORK. PHILADELPHIA. WILMINGTON.

**Ruggles-  
Coles  
Dryers**

FOR  
PHOSPHATES, MINERALS, FEEDS,  
SALTS, Etc.

**Ruggles-Coles Eng. Co.**  
39 Cortlandt St., N. Y. CITY.  
Old Colony Bldg., CHICAGO, ILL.

**SMOKE CONSUMERS**

are expensive and superfluous  
if you burn

**FALCON WHITE ASH  
MOSHANNON COAL.**

If a TON of it were the size  
of this page, the ASH it contains  
would be only as large as this ad.

**W. F. JACOBY & COMPANY**  
920 Stephen Girard Building, PHILADELPHIA, Pa.  
11 Broadway, NEW YORK.  
1316 Continental Trust Bldg., BALTIMORE, Md.  
147 Milk Street, BOSTON, MASS.

**A. C. Danner, Pres. J. C. Strong, Sec'y. & Treas.**  
**MOBILE COAL COMPANY.**

**COAL**

AT WHOLESALE AND RETAIL.  
**CARGO & BUNKER COAL,**  
furnished promptly.

Main Office, 67 St. Francis St. **MOBILE, ALA.**

**G. L. STUEBNER  
IRON WORKS.**

MANUFACTURERS OF

Self-Dumping and Self-  
Righting

**HOISTING  
BUCKETS**

FOR HANDLING

Coal, Ores, Clay,  
Sand, Etc.

Send for Catalog 555.

East Ave. Cor. 3d St.  
Long Island City, N. Y.



Classified Index of Advertisers. FOR ALPHABETICAL INDEX See Page 31.

**Fire Escapes.** Bolles Iron & Wire Works, J. E., Detroit, Mich. Dow Wire Works Co., Louisville, Ky. Inglis, Wm., Wire & Iron Works, Detroit, Mich.

**Flooring. (Polished Hardwood.)** Adams, J. M., Baltimore, Md. Wilco Co., The T., Chicago, Ill.

**Floor and Grist Mill Machinery and Supplies.** Aling Co., Inc., J. E., Brooklyn, N. Y. Caldwell, H. W., & Son Co., Chicago, Ill. Dehner-Wuerpel Mill Bldg. Co., St. Louis, Mo. DeLoach Mill Mfg. Co., Atlanta, Ga. Nordyke Marmon Co., Indianapolis, Ind. Salem Machine Works, Salem, Va. Sprout, Waldron & Co., Muncy, Pa. Starr, B. F., & Co., Baltimore, Md. Wolf Co., Chambersburg, Pa.

**Forges.** Boston Blower Co., Hyde Park, Mass. Buffalo Forge Co., Buffalo, N. Y. Burtevant Co., B. F., Boston, Mass.

**Foundry Equipment and Supplies.** Biting, Edw. J., Philadelphia, Pa. Hill & Griffith Co., Cincinnati, O. Obernauer Co., S., Cincinnati, O.

**Foundry Ladies. [See Foundry Equipment Fuel Economizer.]** Broome, Schmidt & Co., York, Pa. Green Fuel Economizer Co., Matawan, N. Y.

**Fuel Oil Equipment and Machinery.** Petroleum Iron Works Co., Washington, Pa. Rockwell Engineering Co., New York. Tate, Jones & Co., Inc., Pittsburgh, Pa.

**Furnace Builders.** Erikson, Edw. E., Pittsburgh, Pa. Kennedy, Walter, Pittsburgh, Pa. Mead & Fulton Iron Works, Birmingham, Ala. Witherow, Jas. P., Pittsburgh, Pa.

**Furnace Heating. (Stoves.)** Richmond Stove Co., Norwich, Conn.

**Furnaces. (Metallurgical.)** Rockwell Engineering Co., New York, N. Y.

**Furnaces. (Gas Soldering.)** Jacobson Mfg. Co., Warren, Pa.

**Gages (Recording) and Counters.** American Steam Gauge Co., Boston, Mass. Crosby Steam Gauge & Valve Co., Boston, Mass.

**Galvanized Sheets.** American Sheet Steel Co., New York, N. Y.

**Gas Regulator.** Jacobson Machine Manufacturing Co., Warren, Pa.

**Gas Producers.** Erikson, Edward L., Pittsburgh, Pa. Wood, R. D., & Co., Philadelphia, Pa.

**Gas and Steam Filters' Tools.** Saunders Sons, D., Yonkers, N. Y.

**Gaskets. (Rubber.)** Boston Belting Co., Boston, Mass. Voorhees Mfg. Co., Jersey City, N. J.

**Gear Cutting Machines.** Whitton Machine Co., E., New London, Conn.

**Gears and Pinions. (Raw Hide.)** New Process Rawhide Co., Syracuse, N. Y.

**Gearing.** Chester Steel Castings Co., Philadelphia, Pa. Fairmount Machine Co., Philadelphia, Pa. Jeffrey Mfg. Co., The, Columbus, O. Greenwald Co., J. & E., Cincinnati, O. Link-Belt Engineering Co., Philadelphia, Pa. Morse, Williams & Co., Philadelphia, Pa. New Process Rawhide Co., Syracuse, N. Y. Nutall Co., R. D., Pittsburgh, Pa. Smith Co., S., Morgan, York, Pa. Woods Sons T. B., Chambersburg, Pa.

**Geologist.** Cattell, Chas., Staunton, Va.

**Graphophones.** Columbia Phonograph Co., Balto., Md.

**Grates and Grate Bars.** McClave, Brooks & Co., Scranton, Pa.

**Grates. (Domestic.)** Burnham Grate Co., Huntsville, Ala.

**Grain Elevator Supplies.** Aultman Co., The, Canton, O. Caldwell, H. W., & Son Co., Chicago, Ill. Jeffrey Mfg. Co., Columbus, O. Link-Belt Engineering Co., Nicetown, (Phila.) Pa.

**Graphite.** Detroit Mfg. Co., Detroit, Mich. Dixon Crucible Co., Jersey City, N. J. Hill & Griffith Co., Cincinnati, O.

**Grease. (Lubricating.)** Cook's Sons, Adam, New York, N. Y. Robinson, Wm. C., & Son, Baltimore, Md.

**Grinding and Polishing Mch.** Abrasive Material Co., The, Philadelphia, Pa. Builders Iron Foundry, Providence, R. I. Cordonnier Co., The, Niagara Falls, N. Y. Morris Emery Wheel Co., Worcester, Mass. Scranton Corundum & Emery Wheel Co., Scranton, Pa. Burtevant Mill Co., Boston, Mass. Tanite Co., The, Stroudsburg, Pa. Vitrified Wheel Co., Westfield, Mass.

**Groovers.** Hether Bros., Rochester, N. Y.

**Hammers. (Steam, Power, Pneumatic.)** American Engineering Works, Chicago, Ill. Dupont Mfg. Co., St. Johnsbury, Vt. Robinson, J. M. & Co., Cincinnati, O. Standard Pneumatic Tool Co., Chicago, Ill.

**Handle Mch. [See Work's Mch.]** Egan Co., The, Cincinnati, O. Fay, J. A., & Co., Cincinnati, O. Root, B. M., York, Pa. Trevor Mfg. Co., Lockport, N. Y.

**Hardware Specialties.** Schaefer, W. J., & Co., New York, N. Y. Wrightsville Hardware Co., Wrightsville, Pa.

**Hardwood Flooring.** Adams, J. M., Baltimore, Md. Wilco Co., The T., Chicago, Ill.

**Hay Tools.** Myers & Bro., F. E., Ashland, O.

**Heating Apparatus.** American Blower Co., Detroit, Mich. Boston Blower Co., Hyde Park, Mass. Dowman Mfg. Co., Atlanta, Ga. Exeter Machine Works, Exeter, N. H. Gibbs & Co., W. H., Columbia, S. C. Monier Steam Generator Mfg. Co., Baltimore, Md. Peirce, Hammond Co., The, Cincinnati, O. Richmond Stove Co., Norwich, Conn. Burtevant Co., B. F., Boston, Mass. Vapor Heating Co., York, Pa. Warren Webster Co., Camden, N. J.

**Hoisting Machinery.** Breen Machine Co., John F., Ravenna, O. Clegg Machinery & Supply Co., Allegheny, Pa. Case Manufacturing Co., The, Columbus, O. Contractors' Plant Mfg. Co., Buffalo, N. Y. Exeter Machine Works, Exeter, N. H. Gibbs & Co., W. H., Columbia, S. C. Monier Steam Generator Mfg. Co., Baltimore, Md. Peirce, Hammond Co., The, Cincinnati, O. Richmond Stove Co., Norwich, Conn. Burtevant Co., B. F., Boston, Mass. Vapor Heating Co., York, Pa. Warren Webster Co., Camden, N. J.

**Hose.** Boston Belting Co., Boston, Mass. Eureka Fire Hose Co., New York, N. Y. Gibber & Co., W. H., Columbia, S. C. N. J. Car Spring & Hub. Co., Jersey City, N. J. Peerless Rubber Mfg. Co., New York, N. Y. Rhodes J. E., Sons, Wilmington, Del. Textile Mill Supply Co., Charlotte, N. C. Vaseline Mfg. Co., Jersey City, N. J.

**Hose Reel. (Fire.)** Cliff & Gilbert Co., New York, N. Y.

**Hotels.** New Atlantic Hotel, Norfolk, Va. New St. Charles Hotel, New Orleans, La.

**Hydrants.** Glamorgan Pipe & Foundry Co., Lynchburg, Va. Ludlow Valve Mfg. Co., Troy, N. Y. Wood, R. D., & Co., Philadelphia, Pa.

**Hydraulic Machinery.** American, Chicago, Ill.

Wood, R. D., & Co., Philadelphia, Pa.

**Hydraulic Rams.** Power Specialty Co., New York, N. Y.

**Ice Making Machinery & Supplies.** Barber Mfg. Co., A. H., Chicago, Ill.

Cochran Co., Lorain, O. Frick Co., Waynesboro, Pa.

Healy Ice Machine Co., Chicago, Ill.

Remington Machine Co., Wilmington, Del.

Singer Automatic Ice Mch. Co., Bridgeport, Conn.

Stilwell-Bierce & Smith-Vale Co., Dayton, O.

Walter Mfg. Co., Milwaukee, Wis.

Wolf Co., The Fred W., Chicago, Ill.

York Mfg. Co., York, Pa.

**Incorporators. (Companies.)** Delaware Trust Co., Wilmington, Del.

Hornaday, J. P., Cincinnati, O.

Magid, Louis B., & Co., New York, N. Y.

National Promoting & Auditing Co., Boston, Mass.

Polk, Wm., & Co., Alexandria, La.

Southern Industrial Co., Birmingham, Ala.

**Indicators. (Steam Engines.)** American Steam Gauge Co., Jamaica Plain, Mass. Crosby Steam Gauge & Valve Co., Boston, Mass.

**Industrial Opportunities.** Cedartown Co., Philadelphia, Pa.

Gadsden Com. & Industrial Asso., Gadsden, Ala.

Richmond Ind. & Development Asso., Richmond, Va.

Old Dominion Land Co., Newport News, Va.

Wheeling Board of Trade, Wheeling, W. Va.

**Industrial Railways.**

Hunt Co., C. W., West New Brighton, N. Y.

Koppel, Arthur, New York City.

Stoeber Iron Works, G. L., Long Island City, N. Y.

**Injectors.**

American Injector Co., Detroit, Mich.

Jenkins Bros., New York, N. Y.

Lunkenhimer Co., Cincinnati, O.

Ohio Injector Co., Wadsworth, Ohio.

Penberthy Injector Co., Detroit, Mich.

Watson, N. A., Erie, Pa.

**Insurance.**

Hartford Steam Boiler Inspection & Insurance Co., Hartford, Conn.

Maryland Casualty Co., Baltimore, Md.

**Insulators. (Glass.)**

Electrical Material Co., Baltimore, Md.

**Insulator Pins—Telephone Poles.**

Electrical Material Co., Baltimore, Md.

New Orleans Wood Preserving Wks., New Orleans, La.

Houston & Liggett, Lewisburg, Tenn.

**Insulated Wire.**

Electrical Material Co., Baltimore, Md.

Hazard Manufacturing Co., Wilkes-Barre, Pa.

**Iron.**

Alabama Consol. Coal & Iron Co., Birmingham, Ala.

American Iron & Steel Mfg. Co., Lebanon, Pa.

American Sheet Steel Co., New York, N. Y.

American Steel Hoop Co., Pittsburgh, Pa.

**Iron Brokers.**

Armstrong, R. S., & Bro., Atlanta, Ga.

Cox, Jr., Justice, & Co., Inc., Philadelphia, Pa.

Etting, Edw. J., Philadelphia, Pa.

**Jacks. (Lifting, Track and Oil Well.)**

Watson-Stillman Co., New York, N. Y.

**Kettles. (Steam Jacket.)**

Bader, E. B., & Sons Co., Boston, Mass.

**Knife Grinder. (New Automatic.)**

Woods, S. A., Machine Co., South Boston, Mass.

**Knitting Machinery.**

Campbell & Clute Machine Co., Oshkosh, N. Y.

Excelsior Knitting Machine Co., Allentown, Pa.

Mayo Knitting Machine & Needle Co., Franklin, N. H.

McMichael & Wildman Mfg. Co., Norristown, Pa.

Nye & Tredick, Philadelphia, Pa.

Scott & Williams, Philadelphia, Pa.

Snyder, H. P., Mfg. Co., Little Falls, N. Y.

**Lamps. (Arc and Incandescent.)**

Acorn Lamp Works, Chicago, Ill.

Alexander, Jr., Co., S. B., Charlotte, N. C.

Electrical Material Co., Baltimore, Md.

General Electric Co., Schenectady, N. Y.

Kentucky Electrical Co., Owensboro, Ky.

Shelby Electric Co., Shelby, O.

Westinghouse Electric & Mfg. Co., Pittsburgh, Pa.

**Lamps. (Gasoline.)**

Imperial Gas Lamp Co., Chicago, Ill.

**Lamp Cleaner. (Incandescent.)**

Incandescent Elec. Lgt. Manipulator Co., Boston, Mass.

**Lamp Adjuster. (Incandescent.)**

Incandescent Elec. Lgt. Manipulator Co., Boston, Mass.

**Lamp Renewer. (Incandescent.)**

Incandescent Elec. Lgt. Manipulator Co., Boston, Mass.

**Lamps. (Incandescent Hydro Carbon.)**

Kilton Hydro Carbon, H. & I. L., Co., Phila., Pa.

**Lands.**

Beaumont Trust Co., Beaumont, Tex.

Brobston, Fenwick & Co., Brooklyn, N. Y.

Dibble, S., Orangeburg, S. C.

Hornaday, J. P., Cincinnati, O.

Killebrew, J. B., Industrial and Immigration Agent, Nashville, Tenn.

Polk, Wm., & Co., Alexandria, La.

Richards, M. V., Land & Industrial Agt., Wash., D. C.

Sutherland, Howard Land Agent, Elkins, W. Va.

Watson, R. E., Atlanta, Ga.

**Lanterns.**

Dietz, Co., R. E., New York.

**Lathes. (Engine.)**

American Tool Works Co., Cincinnati, O.

McCabe, J. J., New York, N. Y.

Schumacher & Boye, Cincinnati, O.

**Laundry Machinery.**

Adams Laundry Machinery Co., Troy, N. Y.

Sinclair Co., S. H., Chicago, Ill.

Wilson Laundry Machinery Co., Columbus, Pa.

**Lead. (Sheet.)**

Robertson, Mfg. Co., James, Baltimore, Md.

Charleston Lead Works, Charleston, S. C.

**Lead and Tin. (Pig.)**

Hiers, Theo., & Son, St. Louis, Mo.

Ryan & Co., J. J., Chicago, Ill.

**Lime.**

Carolina Portland Cement Co., Charleston, S. C.

Southeastern Lime & Cement Co., Charleston, S. C.

Warren Co., Charles, New York, N. Y.

**Locomotive Builders. [See Railroad Equipment and Supplies.]**

American Locomotive Co., New York, N. Y.

Baldwin Locomotive Works, Philadelphia, Pa.

Climax Mfg. Co., Corry, Pa.

Males Co., Cincinnati, O.

Porter Co., H. E., Pittsburgh, Pa.

**Locomotive Builders.**

American Locomotive Co., New York, N. Y.

Baldwin Locomotive Works, Philadelphia, Pa.

Climax Mfg. Co., Corry, Pa.

Males Co., Cincinnati, O.

Porter Co., H. E., Pittsburgh, Pa.

**FREE!**

You can use this for 30 days without risk or cost.

Trial Balance in 30 Minutes.



No Night Work.

Ask your Bank Its Worth.

**The Burrough Adding Machine**  
MADE BY  
American Arithmometer Co., St. Louis, Mo.

BRANCH OFFICES :

New York—202 Broadway.

Philadelphia—906 Provident Building.

Chicago—902 Ft. Dearborn Building.

New Orleans—846 Common street.

Boston—513 John Hancock Building.

Pittsburg—1006 Park Building.

Rochester (N. Y.)—773 Powers Block.

San Francisco—303 California street.

Cleveland—1206 American Trust Building.

Washington (D. C.)—904 F street.

Kansas City—529 Beals Building.

Milwaukee—91 Wisconsin street.

Minneapolis—617 Guaranty Building.

Cincinnati—1921 Hewitt avenue.

Louisville—622 West Main street.

Atlanta—833 Equitable Building.

Des Moines (Iowa)—311 Fifth street.

Montreal (Canada)—290 St. James street.

MANUFACTURED  
ONLY BY  
E. M. DART MFG. CO.  
PROVIDENCE, R. I.  
THE FAIRBANKS CO.

# DART UNION

THE BEST UNION COUPLING  
MADE IN THE WORLD  
NO RUST ON EITHER SIDE

Sales Agents.



Box Handling Conveyor in Brewery.  
Conveyors for handling material  
either in bulk or packages.

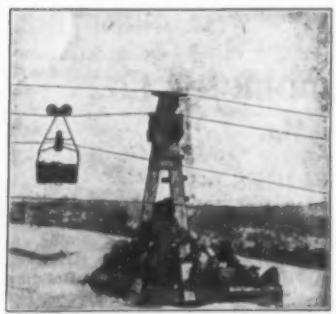
Send for Catalogue No. 56.

ADDRESS  
THE JEFFREY MFG. COMPANY,  
COLUMBUS, OHIO, U. S. A.  
NEW YORK. CHICAGO. DENVER.

JEFFREY  
Elevators, Conveyors,  
FOR  
MILLS, FACTORIES, POWER  
HOUSES, MINES, Etc.



Conveyor handling bottles in Brewery.  
Capacity of system, 90,000 bottles per day.



Bleichert Tramway of Ludwig Mond, Victoria  
Mines, Ontario, Canada.

Manufacturers, Engineers and Contractors and sole licensees in North America for the Bleichert System.  
Also, W.ire Rope Equipments for Cable-Hoist Conveyors, Surface and Underground Haulage, etc.

Illustrated book upon application.

NEW YORK OFFICE—Cooper, Hewitt & Co., 17 Burling Slip. CHICAGO OFFICE—1114 Monadnock Bldg.

## United Telpherage Co.

20-22 Broad St.,

New York, U. S. A.

AUTOMATIC  
TRANSPORTATION  
OF MATERIAL BY  
ELECTRICITY.

Overhead, Surface or Underground.  
Length of Line, Speed Curves, Switches and  
Turnouts no obstacle.

Send for circulars 11, 12, 13, 14, 15.

## Wire Rope. Insulated Wires.

Bend for Handsomely Illustrated  
Catalogs.

Hazard Mfg. Co.,  
Wilkesbarre, Pa.

NEW YORK: go Dey Street. CHICAGO: H. Cannon Co. 24 Market St.

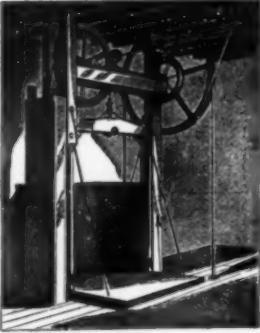


Maryland Foundry & Machine Co.  
BALTIMORE, MD.  
Passenger and Freight Elevators,  
SHAFTING, PULLEYS AND HANGERS.  
All kinds of Light and Heavy Iron and Brass Castings.

JAMES H. CURRAN ELEVATOR CO.  
MANUFACTURERS OF  
HIGH GRADE  
PASSENGER AND  
FREIGHT  
ELEVATORS,  
CINCINNATI, O.  
CRUTCHFIELD & GRAY, Agents, 1013 E. Main St., Richmond, Va.

ELEVATORS PASSENGER and FREIGHT  
Of Every Description.  
ALBRO-CLEM ELEVATOR CO., 703 Glenwood Ave., Philadelphia.

THE PARK MFG. CO.  
MANUFACTURERS OF  
High Grade Freight Elevators.



HAND ELEVATOR.

We manufacture a full line of  
Hand and Belt Power  
Elevators.

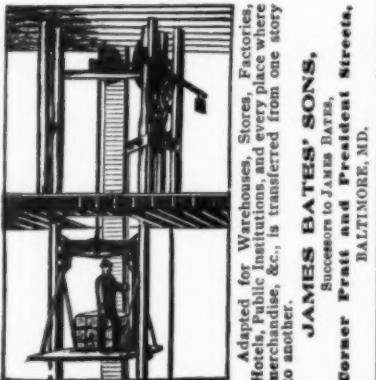
They are the simplest, best and cheapest  
on the market.

All of our machinery is fully guaranteed.  
Correspond with us and we will be glad to  
give you the benefit of our experience.

PARK MANUFACTURING CO.  
CHARLOTTE, N. C.

Send for our descriptive leaflet.

## BATES' Hand Elevators.



Adapted for Warehouses, Stores, Factories, and every place where  
Hotels, Public Institutions, and every place where  
merchandise, &c., is transferred from one story  
to another.  
JAMES BATES' SONS,  
Successors to JAMES BATES,  
Corner Pratt and President Streets,  
BALTIMORE, MD.

## FREIGHT ELEVATORS, Hand and Belt Power.

POWER HOGSHEAD SCREWS.  
THE J. B. WESTBROOKS FOUNDRY  
AND MACHINE CO.

DANVILLE, VIRGINIA.

General Founders and Machinists.



## FREIGHT ELEVATORS

FOR  
Hand, Belt and  
Electric Power.  
PARKHURST BROS. & CO., Indianapolis, Ind.

CHAIN  
Highest Efficiency and  
Durability.

HOISTS  
J. G. SPEIDEL, Reading, Pa.

HAVE YOU TRIED  
WALL'S Everlasting Steel  
TORCHES and OILERS.  
They are Guaranteed. Write  
The P. Wall Mfg. Supply Co.  
ALLEGHENY, PA.



MAIN OFFICE & WORKS, PHILADELPHIA, PA.  
SOUTHERN OFFICE, CHARLOTTE, N. C.

Manufacturers of and Contractors for  
Auto. Fire Extinguishing Apparatus.

Approved by Insurance Interests. \$30,000,000  
of property now protected by this system 40  
Southern Mills equipped. Customers pro-  
tected from any alleged patent infringement.

WRITE US BEFORE BUYING.

Classified Index of Advertisers. FOR ALPHABETICAL INDEX See Page 31.**Loom Harness.**American Supply Co., Providence, R. I.  
Spartanburg Loom Harness Co., Spartanburg, S. C.**Looms and Weaving Machinery.**American Supply Co., Providence, R. I.  
Drapier Co., Hopdal, Mass.**Fairmount Machine Co., Philadelphia.**

Kilburn, Lincoln &amp; Co., Fall River, Mass.

**Lowell Machine Shop, Boston, Mass.****Mason Machine Works, Taunton, Mass.****Lubricating Compounds.**

Cook's, Adam, Sons, New York, N. Y.

**Lubricators and Oil Cups.**

Baily, Chas. H., &amp; Co., Chicago, Ill.

Cook's Sons, Adam, New York, N. Y.

Crosby Steam Gauge &amp; Valve Co., Boston, Mass.

Detroit Lubricator Co., Detroit, Mich.

Lunkenheimer Co., Cincinnati, O.

Penberthy Injector Co., Detroit, Mich.

**Lumber and Hard Woods.**

Hallam, W. W., Macon, Ga.

Wile Co., The T., Chicago, Ill.

**Machinery. (Winding, Measuring & Folding.)**

Philadelphia Textile Specialty Mch. Co., Phila., Pa.

**Machinery. (Special.)**

Alsing Co., J. H., Inc., Brooklyn, N. Y.

Aultman Co., The, Canton, O.

Leffler, Charles &amp; Co., Brooklyn, N. Y.

Philadelphia Textile Specialty Mch. Co., Phila., Pa.

Roxbury Foundry &amp; Machine Co., Roxbury, Pa.

**Machinery and Tools. (New and Second-hand.)**

American Elec Supply &amp; Mfg. Co., New York, N. Y.

Armstrong, R. S., &amp; Bro., Atlanta, Ga.

Atwell Machinery Co., Pittsburgh, Pa.

Baird, U., Machinery Co., Pittsburgh, Pa.

Baker, H. C., &amp; Co., Philadelphia, Pa.

Baumgarten, A. F., &amp; Bro., Pittsburgh, Pa.

Bowen, Joseph, E., Northfield, Vt.

Caine Co., Philadelphia, Pa.

Clegg Engineering Co., Chicago, Ill.

Gatlin Machinery Supply Co., Allegheny, Pa.

Casey, D. L., Men. Co., Springfield, Ill.

Chicago House Wrecking Co., Chicago, Ill.

Cleveland Building &amp; Machinery Co., Cleveland, O.

Conard, Thos. P., Philadelphia, Pa.

Cox, Justice Jr., &amp; Co., Ltd., Philadelphia, Pa.

Davis, W. P., Atlanta, Ga.

Fairmount Coal Co., Fairmount, W. Va.

Henning, John, &amp; Son, Philadelphia, Pa.

Harris, G. C., St. Louis, Mo.

Jones, J. B., &amp; Co., Allegheny, Pa.

Lemman, T., Birmingham, Ala.

Mallory, J. D., Baltimore, Md.

Mengel Machinery Exchange, Baltimore, Md.

Merrill, W., Lynchburg, Va.

Paradox Machinery Co., Chicago, Ill.

Pouliot &amp; Co., Philadelphia, Pa.

Prentiss Tool &amp; Supply Co., New York, N. Y.

Price Machinery Co., Chicago, Ill.

Rechlin, Louis E., &amp; Bro., Cincinnati, O.

Rosister, MacGoveru &amp; Co., New York, N. Y.

Sabel Bros., Jacksonville, Fla.

Saxton, J. C., New York, N. Y.

Seifert's L. F., Sons, Philadelphia, Pa.

Thompson, Son &amp; Co., New York, N. Y.

Toomey, Frank, Philadelphia, Pa.

Torbert &amp; Peckham, Chicago, Ill.

Trampe, Charles F., St. Louis, Mo.

Waters, John A., &amp; Co., Richmond, Va.

Wicker Bros., Pittsburgh, Pa.

Williams, E. O., Chicago, Ill.

Wisconsin Mch. Co., Milwaukee, Wis.

**Machinists' Supplies.**

Baily, Chas. H., &amp; Co., Chicago, Ill.

**Mail Chutes.**

Outler Mfg. Co., Rochester, N. Y.

**Manganese.**

Kendall &amp; Fluck, Washington, D. C.

**Mechanical Draft.**

American Blower Co., Detroit, Mich.

Boston Blower Co., Hyde Park, Mass.

Burkeart Co., B. F., Boston, Mass.

**Mechanizing Machinery.**

Philadelphia Textile Specialty Mch. Co., Phila., Pa.

**Metal Lathes. (Expanded.)**

Associated Expanded Metal Co. of U. S., New York.

**Metal-Working Machinery.**

American Tool Works Co., Cincinnati, O.

Bertch &amp; Co., Cambridge City, Ind.

Baily &amp; Co., Chicago, Ill.

Lands Tool Co., Waynesboro, Pa.

Niagara Machine &amp; Tool Works, Niagara Falls, N. Y.

Pratt &amp; Whitney Co., Hartford, Conn.

Robinson &amp; Co., J. M., Cincinnati, O.

Roxbury Foundry &amp; Machine Co., Roxbury, Pa.

Whitton Machine Co., D. E., New London, Conn.

Wicker Bros., Pittsburgh, Pa.

**Meters. (Water.)**

Pittsburg Meter Co., E., Pittsburgh, Pa.

**Mill Cogs. (Maple.)**

Bowsher Co., N. P., South Bend, Ind.

**Mill Engineers and Architects.**

Chapman, Wm. A., &amp; Co., Providence, R. I.

Lockwood, Green &amp; Co., Boston, Mass.

Makepeace, C. B., &amp; Co., Providence, R. I.

Perry, Nathaniel V., Atlanta, Ga.

Prayor, U. A. M., &amp; Co., Providence, R. I.

Whaley, W. B. Smith &amp; Co., Columbia, S. C.

Wheeler, McMichael &amp; Co., Charlotte, N. C.

**Mill Picks.**

Higgin, John C., &amp; Son, Chicago, Ill.

**Mill Supplies.**

Alexander, Jr., Co., S. B., Charlotte, N. C.

Balley-Leslie Co., The, Charlotte, S. C.

Cameron &amp; Barnes Co., The, Cleveland, S. C.

DeLong Whirlpool Mill Building Co., St. Louis, Mo.

Fairbank Co., Building, Mo.

Gibson, W. C., Co., Columbia, S. C.

Goldschmid Co., J. &amp; E., Cincinnati, O.

Lombard Iron Works &amp; Supply Co., Augusta, Ga.

Mecklenburg Iron Works, Charlotte, N. C.

Miller Oil &amp; Supply Co., Indianapolis, Ind.

Miller, W. J., &amp; Co., New York, N. Y.

**Milling Machines.**

American Tool Works Co., Cincinnati, O.

**Mineral Wool.**

U. S. Mineral Wool Co., New York, N. Y.

**Mine Locomotives. (See Locomotive Builders.)****Mining Machinery. (Gold, Copper, etc.)**

Creson Co., Geo. V., New York, N. Y.

McLanahan-Stone Machine Co., Hollidaysburg, Pa.

Mecklenburg Iron Works, Charlotte, N. C.

Northern Electric Manufacturing Co., Madison, O.

Rogers Boat, Gauge &amp; Drill Works, The John M., Gloucester City, N. J.

Simpson Mfg. Co., Chicago, Ill.

Stanley Electric Manufacturing Co., Pittsfield, Mass.

**Mining Screens. (See Screens.)****Mixing Machinery.**

Alsing Co., J. H., Inc., Brooklyn, N. Y.

Aultman Co., The, Canton, O.

Dunning, W. D., Syracuse, N. Y.

Walker &amp; Elliott, Wilmington, Del.

**Mortar Colors.**

Chattanooga Paint Co., Chattanooga, Tenn.

French, Sam'l. H., &amp; Co., Philadelphia, Pa.

**Nails. (Wire.)**

Ludlow-Saylor Wirs Co., The, St. Louis, Mo.

**Oils.**

Adam Cook's Sons, New York, N. Y.

Baily, Chas. H., &amp; Co., Chicago, Ill.

Boman, James &amp; Co., Pittsburgh, Pa.

Galena-Signal Oil Co., Franklin, Pa.

Miller Oil &amp; Supply Co., Indianapolis, Ind.

Robinson, Wm. C., &amp; Son, Baltimore, Md.

**Oil-Burning Appliances.**

Petroleum Oil Works Co., Washington, Pa.

## MANUFACTURERS' RECORD.

FOR ALPHABETICAL INDEX See Page 31.

**Rockwell Engineering Co., New York, N. Y.**

Tate, Jones &amp; Co., Inc., Pittsburgh, Pa.

**Others.**

Lunkenheimer Co., Cincinnati, O.

**Packing.**

Boston Belting Co., Boston, Mass.

Fairbanks Co., Baltimore, Md.

Gibbons &amp; Co., W. H., Columbia, S. C.

Goodwin Packing Co., Chicago, Ill.

Jenkins Bros., New York, N. Y.

Johns Mfg. Co., H. W., New York, N. Y.

Keasey &amp; Mattison Co., Ambler, Pa.

N. J. Car Spring &amp; Rubber Co., Jersey City, N. J.

Peerless Rubber Mfg. Co., New York, N. Y.

Rhoads, J. E., &amp; Sons, Wilmington, Del.

Robertson, W. J., &amp; Co., New York, N. Y.

Textile Mill Supply Co., Charlotte, N. C.

Voorhees Rubber Mfg. Co., Jersey City, N. J.

**Paint. (Cold Water, etc.)**

Bird &amp; Co., J. A. &amp; W., Boston, Mass.

Columbia Refining Co., New York, N. Y.

Hoover Co., Frank H., New York.

Fox, M. Ewing &amp; Co., New York, N. Y.

Muralo Co., New Brighton, Borough of Richmond, N. Y.

Muxey Bros., Paterson, N. J.

**Painting.**

Armitage Mfg. Co., The, Richmond, Va.

Barrett Mfg. Co., Philadelphia, Pa.

Chattanooga Paint Co., Chattanooga, Tenn.

Colonial Paint &amp; Varnish Co., Cleveland, O.

Detroit Graphite Mfg. Co., Detroit, Mich.

Dixon Crucible Co., Joseph, Jersey City, N. J.

Eastern Granite Roofing Co., Jersey City, N. J.

Fremont Smelter Co., The, Philadelphia, Pa.

Gulf Oil Co., Cleveland, O.

Holden &amp; Bullington, Atlanta, Ga.

Johns Mfg. Co., H. W., New York, N. Y.

Pinetown Paint &amp; Chemical Co., Pinetown, N. C.

Standard Paint Co., New York, N. Y.

**Painting Machinery.**

Muralo Co., New Brighton, Borough of Richmond, N. Y.

Star Brass Works Co., The, Chicago, Ill.

Barrett Mfg. Co., The, Richmond, Va.

Eastern Granite Roofing Co., Jersey City, N. J.

Garrett, C. M., &amp; Son, Philadelphia, Pa.

National Roofing &amp; Supply Co., Louisville, Ky.

Standard Paint Co., The, New York, N. Y.

**Paper. (Sand, Emery.)**

Baader, Adamson &amp; Co., Philadelphia, Pa.

**Parquetry.**

Adams, J. M., Baltimore, Md.

**Pattern Makers' Machinery.**

Woods, S. A., Machine Co., South Boston, Mass.

**Patterns. (Metal.)**

Standard Paint Co., The, New York, N. Y.

**Paving Materials.**

Charlotte Roofing &amp; Paving Co., Charlotte, N. C.

National Roofing &amp; Supply Co., Louisville, Ky.

Robinson Contracting Co., Geo. A., Mobile, Ala.

Warren-Khet Co., Philadelphia, Pa.

**Perforated Metal.**

Aitchison Perforated Metal Co., Robert, Chicago, Ill.

Baily, Chas. H., &amp; Co., Chicago, Ill.

Harrington &amp; King Perforating Co., Chicago, Ill.

Hendrick Mfg. Co., The, Ltd., Carbondale, Pa.

Ludlow-Saylor Wirs Co., The, St. Louis, Mo.

Mundt, Charles, &amp; Sons, New York, N. Y.

**Phosphate Machinery.**

Alsing Co., J. B., Inc., Brooklyn, N. Y.

Aultman Co., The, Canton, O.

Bailey-Levy Co., The, Charleston, S. C.

Bradley Pulverizer Co., Boston, Mass.

Cameron &amp; Barkley Co., Charleston, S. C.

OIL DRILLS Made in Special Lengths.



The above cut represents a drill 1/8 inches diameter, 44 inches whole length, 8 5/16 inches length of shank.

Morse Twist Drill &amp; Machine Co.

NEW BEDFORD,

MASS., U. S. A.

BUY YOUR  
Genuine  
Bangor  
Roofing  
SLATE

Direct from the  
MANUFACTURER

GENUINE BANGOR SLATE  
COMPANY,

EASTON, PENNA.

True to Pattern

Light Steel & Refined Malleable Iron

Uniform Structure

Superior Quality

Great Strength

**CASTINGS**

of Every Description.

NORWAY IRON & STEEL CO., York, Pa.

ROSS-MEEHAN FOUNDRY CO.

Chattanooga, Tennessee.

GREY & MALLEABLE IRON FOUNDERS.  
M.G.B. COUPLERS.

**CASTINGS**

STEEL  
CASTINGS

OPEN HEARTH Steel Castings of every description, for Electrical Machinery; Dredging, Rolling and Sugar Mill Machinery; Locomotive, Railroad and Bridge Work, etc.

McHAFFIE Steel Castings of all shapes and sizes, from 1 lb. up. Superior for Crankshafts, Gearing and other purposes where great wearing results are required.

CHESTER STEEL CASTINGS CO.  
Works, CHESTER, PA. Office, 407 Sansom St., PHILA., PA.  
Correspondence Solicited.

HOOPES & TOWNSEND CO.

Philadelphia, Pa.

MAKE RIVETS  
IN SOLID DIES.

No. 9 x 1/4 in. to 1 1/2 x 42 in.

NO KINKS IN OUR STEEL MEASURING TAPES.

They are subjected, before graduation, to the strain prescribed by the United States Standard of Weights and Measures, and their absolute accuracy is guaranteed. Common and metric markings.

We make the largest line of steel, linen and metallic tapes in America.

Write for catalogue.

Lufkin Rule Co.

1310 HESS STREET, SAGINAW, MICH.

NEW YORK OFFICE, 291 STEWART BUILDING.

Railway Materials



Factories, Plantations, Quarries, Mines, Contractors, Etc.

CARS of Every Description. For Every Purpose.

RAILS, SWITCHES, TURNTABLES, ETC.

always in stock.

MANUFACTURED BY

ARTHUR KOPPEL,

Steel All-Round Dump Car. Also built for end or side dumping only. Write for catalogue. 66-68 Broad St., NEW YORK.

Latrobe Steel Company,

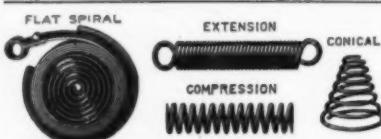
Manufacturers of STEEL TIRES for Locomotive and Car Wheels.

Works, Latrobe, Pa. Branch Office, 1506 Bowling Green Offices, 11 Broadway, N. Y. Main Office, 1200 GIRARD BLDG, PHILADELPHIA.

**BRASS FOUNDERS FINISHERS J. J. RYAN & CO.**

68-74 West Monroe St., Chicago.

Best Bronze, Babbitt Metals, Brass and Aluminum CASTINGS on Short Notice.



Wire and Springs

Every Description.

CARY SPRING WORKS,  
240 & 242 W. 29th St., NEW YORK, N. Y.

Anti-Friction Metal

FOR ALL PURPOSES.  
QUALITY THE BEST.

Humboldt Metal Works,

So. Somerville, N. J.

KENDALL & FLICK  
MANGANESE  
WASHINGTON, D. C.

AULTMAN

ELEVATORS AND CONVEYORS

COAL AND ROCK CRUSHERS

COAL TIPPLES

CAR HAULS.

SEND FOR CATALOGUE D.

THE AULTMAN COMPANY  
CANTON, OHIO.

## Classified Index of Advertisers.

FOR ALPHABETICAL INDEX See Page 31.

**Power Transmission Machinery.**  
 Caldwell, H. W., & Son Co., Chicago, Ill.  
 Cresson Co., Geo. V., New York, N. Y.  
 Dehner-Wuebel Mill Building Co., St. Louis, Mo.  
 Fairmount Machine Co., Phila., Pa.  
 Hunt Co., C. W., New York, N. Y.  
 Jacobson Mfg. Co., Warren, Pa.  
 Link-Belt Engineering Co., Philadelphia, Pa.  
 Northern Electric Mfg. Co., Madison, Wis.  
 Stanley Electric Mfg. Co., Pittsburgh, Pa.  
 Wood's, T. B., Sons, Chambersburg, Pa.

**Presses.** (Bailing, Cottonseed Oil etc., Hydraulic and Power.)  
 Beemer & Borchert Press Co., Syracuse, N. Y.  
 Bushnell Press Co., G. H., Thompsonville, Conn.  
 Cardwell Machine Co., Richmond, Va.  
 Valk & Murdoch Iron Works, Charleston, S. C.  
 Watson-Stillman Co., New York, N. Y.

**Presses.** (Stamping.)

Leffler, Chas., & Co., Brooklyn, N. Y.

Niagara Machine & Tool Works, Buffalo, N. Y.

**Pulleys.** (Friction Clutch.)

Blakeslee Mfg. Co., Birmingham, Ala.

Cresson Co., Geo. V., New York, N. Y.

Fairmount Machine Co., Philadelphia, Pa.

Jacobson Mfg. Co., Warren, Pa.

Morgan Smith Co., S., York, Pa.

Whitman Mfg. Co., New York, N. Y.

Williams, Milton F., & Co., St. Louis, Mo.

Wood's, T. B., Sons, Chambersburg, Pa.

**Pulleys.** (Wood Split.)

Dawson, A. L., & Co., Chicago, Ill.

Eckbald's Sons, Wm., Philadelphia, Pa.

Fairbanks Co., Baltimore, Md.

Ohio Pulley Co., Marion, O.

Saginaw Mfg. Co., Saginaw, Mich.

West Virginia Pulley Co., Clarksburg, W. Va.

**Pulley.** (Pneumatic.)

Williams, Milton F., & Co., St. Louis, Mo.

**Pulleys, Shafting and Hangers.**

Caldwell, H. W., & Son Co., Chicago, Ill.

Cresson Co., Geo. V., New York, N. Y.

Egan Co., The, Cincinnati, O.

Fairbanks Co., Baltimore, Md.

Fay, J. A., & Co., Cincinnati, O.

Finished Steel Co., The, Youngstown, O.

Gibbs & Co., W. H., Columbia, S. C.

Golden's Foundry & Machine Co., Columbus, Ga.

Greenwald Co., I. & E., Cincinnati, O.

Jeffrey Mfg. Co., The, Columbus, O.

Lam Mfg. Co., Montpelier, Vt.

Link-Belt Engineering Co., Philadelphia, Pa.

Lombard Iron Works & Supply Co., Augusta, Ga.

Maryland Foundry & Machine Co., Baltimore, Md.

Morgan Smith Co., S., York, Pa.

Nordyke, Marion Co., Indianapolis, Ind.

Rhoads, J. E., & Sons, Wilmington, Del.

Schofields, J. S., Sons Co., Macon, Ga.

Stillwell-Bierce & Smith-Vaille Co., Dayton, O.

Textile Mills Supply Co., Charlotte, N. C.

Valley Iron Works, Williamsport, Pa.

Wicks Bros., Pittsburgh, Pa.

Wolf Co., Chambersburg, Pa.

Woods, T. B., Sons, Chambersburg, Pa.

**Pumps.** (Pneumatic.)

Bacon Air Lift Co., New York, N. Y.

Ingersoll-Sergeant Drill Co., New York, N. Y.

**Pumps.** (Centrifugal.)

Erie Pump & Engine Co., Erie, Pa.

Southward Foundry & Machine Co., Philadelphia, Pa.

Wood & Co., E. D., Philadelphia, Pa.

**Pumps.** (Power Boiler-Feed.)

Cameron Steam Pump Works, A. S., New York, N. Y.

McGowan Co., John H., Cincinnati, O.

Park Mfg. Co., Charlotte, N. C.

Watson, N. A., Erie, Pa.

**Pumps.** (Steam.)

Cameron Steam Pump Works, A. S., New York, N. Y.

Cameron & Barkley Co., Charleston, S. C.

Cook Well Co., St. Louis, Mo.

Dear Bros. Steam Pump Works, Indianapolis, Ind.

Downie Pump Co., Downsville, Pa.

Gardner Governor Co., Quincy, Ill.

Mason Regulator Co., Boston, Mass.

McGowan, John H., & Co., Cincinnati, O.

Pulsometer Steam Pump Co., New York, N. Y.

Stillwell-Bierce & Smith-Vaille Co., Dayton, O.

Textile Mill Supply Co., Charlotte, N. C.

Watson-Stillman Co., New York, N. Y.

Wicks Bros., Pittsburgh, Pa.

**Pumps.** (French.)

Edson Manufacturing Co., Boston, Mass.

**Pumping Machinery.**

Bacon Air Lift Co., New York, N. Y.

Cook Well Co., The, St. Louis, Mo.

Dean Bros., Indianapolis, Ind.

Downie Pump Co., Downsville, Pa.

Myers, F. E., & Bro., Ashland, O.

Stillwell-Bierce & Smith-Vaille Co., Dayton, O.

Tate, Jones & Co., Inc., Pittsburgh, Pa.

Wood, R. D., & Co., Phila., Pa.

**Pump Governor.**

Gardner Governor Co., Quincy, Ill.

Mason Regulator Co., Boston, Mass.

**Pump Valves.**

Power Specialty Co., New York, N. Y.

**Punching and Shearing Machinery.**

American Tool Works Co., Cincinnati, O.

Bertech & Co., Cambridge City, Ind.

Long & Alstott Co., Hamilton, O.

Niagara Machine & Tool Works, Buffalo, N. Y.

Robinson, J. M., & Co., Cincinnati, O.

Reynsford Foundry & Machine Co., Reynsford, Pa.

Royer, R. D., & Co., Phila., Pa.

**Quarry and Stonecutting Machinery.**

Ingersoll-Sergeant Drill Co., New York, N. Y.

Jeffry Mfg. Co., Columbus, O.

Rand Drill Co., New York, N. Y.

Sullivan Machinery Co., Chicago, Ill.

**Rack Locomotives.** (See Locomotive Bld.)

**Railroad Equipment and Supplies.**

(New and Second-hand.)

American Frog & Switch Co., Hamilton, O.

American Locomotive Co., New York, N. Y.

Bailey-Lobby Co., The, Charleston, S. C.

Benjamin Iron & Steel Co., Buffalo, N. Y.

Birmingham Ball & Locomotive Co., Birmingham, Ala.

Bowen, Joe E., Norfolk, Va.

Conard, Thor P., Philadelphia, Pa.

Cox, Jr., Justice, & Co., Ltd., Philadelphia, Pa.

Fairbanks Co., Baltimore, Md.

Fitz-Hugh & Co., Chicago, Ill.

Grant, New York, N. Y.

Hyde Bros. & Co., Pittsburgh, Pa.

Johns Mfg. Co., H. W., New York, N. Y.

Jones, J. B., & Co., Allegheny, Pa.

Joseph Iron Co., Isaac, Cincinnati, O.

Kilby Locomotive & Machine Works, Anniston, Ala.

Miles Co., Cincinnati, Ga.

May & Spalding, Atlanta, Ga.

New York Equipment Co., New York, N. Y.

Reed, Y., Inc., Chicago, Ill.

Porter Co., H. K., Pittsburgh, Pa.

Poulter & Co., Philadelphia, Pa.

Robinson & Orr, Pittsburgh, Pa.

Sabel, M., & Sons, Mobile, Ala.

Steel Rail Supply Co., The, New York, N. Y.

Southern Iron & Equipment Co., Atlanta, Ga.

Watson, Benj., New York, N. Y.

Weir Frog Co., Cincinnati, O.

Zelnicker, W. A., St. Louis, Mo.

**Railroad Frogs and Switches.**

American Frog & Switch Co., Hamilton, O.

Koppel, Arth., New York, N. Y.

May & Spalding, Atlanta, Ga.

Weir Frog Co., Cincinnati, O.

MANUFACTURERS' RECORD.

13

ESTABLISHED 1831.

ANNUAL CAPACITY 1,200.

BALDWIN LOCOMOTIVE WORKS,  
Single Expansion and Compound Locomotives.

**BROAD and NARROW GAUGE LOCOMOTIVES**, Mine and Furnace Locomotives, Compressed Air Locomotives, Tramway Locomotives, Plantation Locomotives, Oil Burning Locomotives.

**ELECTRIC LOCOMOTIVES WITH WESTINGHOUSE MOTORS**, ELECTRIC CAR TRUCKS WITH OR WITHOUT MOTORS.

All important parts made accurately to gauges and templates, after standard designs or to railroad companies' drawings. Like parts of different locomotives of same class, perfectly interchangeable.

Cable Address:  
BALDWIN PHILADELPHIA.

BURNHAM, WILLIAMS & CO., Philadelphia, Pa. U. S. A.

## AMERICAN LOCOMOTIVE COMPANY,

General Offices, 25 Broad St., New York City.

Builders of  
Locomotives  
for all classes of service.

Mining Locomotives,  
Logging Locomotives,  
Compressed Air Locomotives



## Owning and Operating the

Schenectady Locomotive Works,

Schenectady, N. Y.

Brooks Locomotive Works,

Dunkirk, N. Y.

Pittsburg Locomotive Works,

Allegheny, Pa.

Richmond Locomotive Works,

Richmond, Va.

**LIGHT LOCOMOTIVES**  
Of all gauges of track, from three to forty-five tons weight, including special designs for mines, mills, furnaces, plantations, logging, contractors' use, passenger and freight service, suburban service, street railways and industrial establishments. Compressed Air Locomotives for underground or surface work, at coal, iron, copper, silver, gold and other mines, and for surface work where smoke or sparks must be wholly eliminated.

H. K. PORTER CO.

6th Avenue, PITTSBURGH, PA.

Locomotives, narrow and wide gauge, always on hand.

## CLIMAX

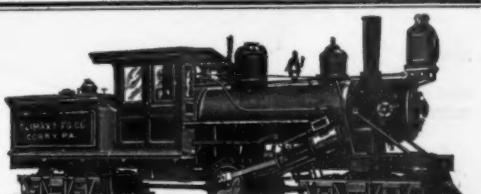
## Geared Locomotives,

For Wood or  
Iron Rail.

Send for Illustrated Catalog.

CLIMAX MFG. CO.

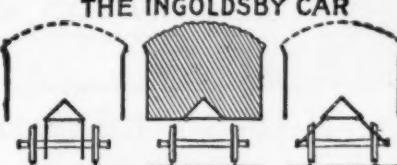
CORRY, PA.



## THE AMERICAN FROG &amp; SWITCH CO., Hamilton, O.

## FROGS, SWITCHES, SWITCH STANDS, RAIL BRACES.

## THE INGOLDSBY CAR

DUMP CARS THAT DUMP  
AND GO BACK INTO EARNING SERVICE  
IMMEDIATELY  
AND KEEP IN IT ALL THE TIME

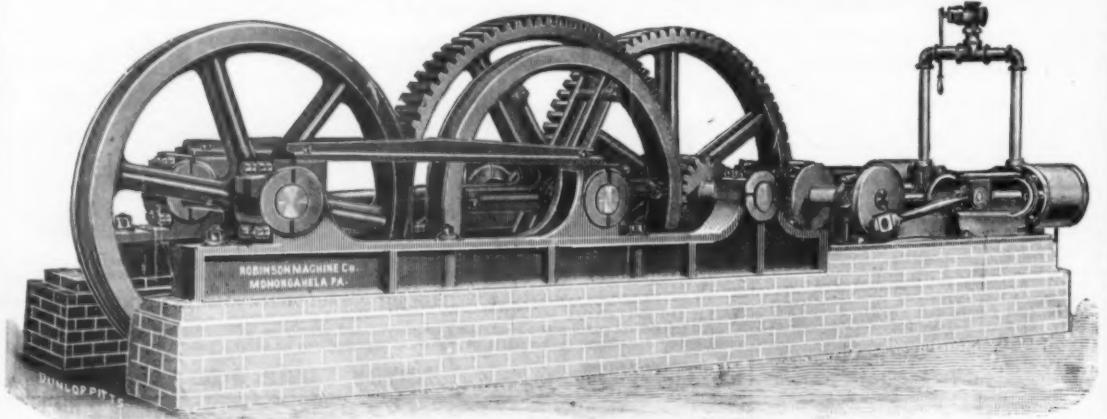
CONTROLLED AND SOLD BY  
THE INGOLDSBY AUTOMATIC CAR CO.

CHEMICAL BUILDING ST. LOUIS, MO.



SOLE MANUFACTURERS OF  
FRED.G.WEIR'S  
IMPROVED RIGID & SPRING FROGS, CROSSINGS,  
SINGLE & THREE THROW SPLIT SWITCHES,  
FIXED & AUTOMATIC SWITCH STANDS, STEEL  
DIE FORMED RAIL BRACES, SWITCH FIXTURES, ETC.

## Endless Rope Haulage Machine.



Built with especial regard to the severe duty required of haulage machinery. It consists of a pair of small engines, geared with compound gearing into two grooved drums, the object of the compound gearing being two fold: 1st, to slow the rope to its proper running speed; 2d, to secure greater power from a small pair of engines. All shafts run in Babbitt metal boxes, which are part of the frame castings which support the entire machine. The advantages of this system of haulage are: 1st. Small cost of machine. Small cost of steam plant required to operate the small engines, which reduces the cost of fuel and attention that would be necessary for a tall-rope system doing an equal amount of work. 2d. Less amount of rope required. 3d. Slow rate of speed of the cars, which reduces the cost of repairs for same. 4th. Rapidity of handling cars. The full train of cars is attached to the rope at the inside parting, proceeding to the tipple without delay. The empty train is attached at the tipple and returns to the inside parting for distribution in the mine. The tipple crew detach the cars, dump and attach to the return line, thus having a constant train of cars on the line at all times. 5th. Avoidance of all possibility of wrecks on the road.

MANUFACTURED BY THE  
ROBINSON MACHINE CO.,  
Full Particulars on Application.

Monongahela, Pa.

Contractor's Plant Mfg. Co., Ltd.

MANUFACTURERS OF  
STEAM, HORSE and HAND POWER

## Hoisting Machines

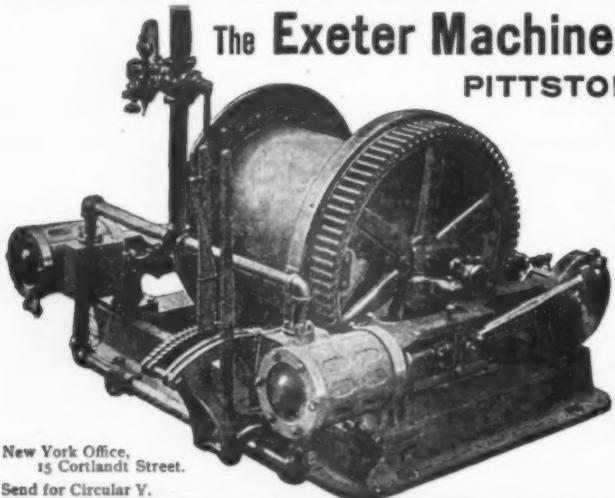
DERRICK IRON and CONTRACTORS' SUPPLIES.  
MANUFACTURERS OF WIRE ROPE.

129 Erie Street, Buffalo, N. Y.  
Mention this Journal.



If you wish to keep posted on the progress of the South, read the Manufacturers' Record. Price \$4 a year.

## The Exeter Machine Works PITTSTON, PA.



New York Office,  
15 Cortlandt Street.  
Send for Circular Y.

Holisting  
Engines  
FOR  
Contractors and  
Mines.  
Coal Handling  
Machinery  
FOR  
Power Houses,  
Coal Yards  
and Mines.  
Cable and  
Automatic  
Railways.

## THE JOHN F. BYERS MACHINE CO.

RAVENNA, OHIO.

Manufacturers of  
Hoisting Engines, Locomotives,  
Derrick Cars, Derrick  
Irons, Etc.

Write for Catalogue "F."

## Callahan's Specialties.

Once Tried, Always Used.

Old Reliable Steam Joint and Pipe Cement, for all leaking pipes, screw and flange joints.

Rubber Roof Cement, for all leaking roofs, around gutters, cornices, chimneys, etc. Will stick to a Wet Roof.

Anti-Slip Belt Dressing instantly stops all slipping belts and preserves the leather.

Fibre Cord Belt Lacing. Something Entirely New.

Free Samples sent on request. Send for our Desk Blotters.

## Geo. Callahan & Company,

218 Front St., New York, U.S.A.

Atlas Engine Works.  
Indianapolis.

ALBANY GREASE ADAM COOK'S SONS, 313 West Street, New York City, U. S. A.  
Branch, 31 S. Canal Street, Chicago, Ill.  
See special ad. 1st issue each month.

St. Louis Iron & Machine Works,  
100 Chouteau St., ST. LOUIS, MO.  
BUILDERS OF  
St. Louis Corliss Engine.  
50 TO 2000 H. P.  
Brick Machinery.

SEND FOR NEW CATALOGUE

## Engines, Boilers, Saw Mills, Presses.

Write to

GENERAL MANUFACTURERS OF

MECKLENBURG IRON WORKS, Charlotte, N. C.

MACHINERY

## Classified Index of Advertisers.

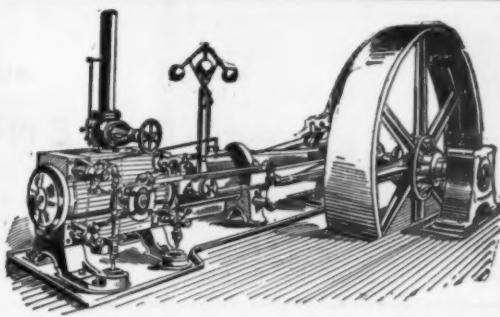
For ALPHABETICAL INDEX See Page 31.

**Seals.** (Stock Certificates, etc.) Middletown, J. W., Chicago, Ill.  
**Self Measuring Shop Oil Cabinet.** Rouse & Co., N. E., Pitts. Wayne, Ind.  
**Separators.** (Cream.) Vermont Farm Machine Co., Bellows Falls, Vt.  
**Separators.** (Dust.) Allington & Curtis Mfg. Co., Saginaw, Mich.  
**Sterling Blowers & Piping Mfg. Co.** Hartford, Conn.  
**Startevant Co.** B. F., Boston, Mass.  
**Separators.** (Steam and Oil.) American Tool Works Co., Cincinnati, O.  
**Austin Separators Co.** Detroit, Mich.  
**Bonney, James, & Co.** Pittsburgh, Pa.  
**Harrison Safety Boiler Works.** Philadelphia, Pa.  
**Webster Warren & Co.** Philadelphia, Pa.  
**Shaft Coupling.** (Compression.) Davis Machine Co., W. P., Rochester, N. Y.  
**Shapers.** American Tool Works Co., Cincinnati, O.  
**Sheet-Metal-Working Machinery.** [See Metal-Working Machinery.]  
**Sheet Steel and Iron.** American Sheet Steel Co., New York, N. Y.  
**Shingle, Lath and Stave Machinery.** [See Woodworking Machinery.]  
**Lane Mfg. Co.** Montpelier, Vt.  
**Trevor Mfg. Co.** Lockport, N. Y.  
**Ship Builders.** (Iron and Steel) Newport News Shipbuilding & Dry Dock Co., Newport News, Va.  
**Skylights.** Downey Mfg. Co., Atlanta, Ga.  
**Merchant & Co., Inc.** Philadelphia, Pa.  
**National Skylight & Construction Co.** New York, N. Y.  
**Noorden Co.** E. Van, Boston, Mass.  
**Slaters.** (Roofing and Blackboard.) Galt, John, & Sons, New York, N. Y.  
**Smoke Stacks.** (Iron and Steel.) Hammer Iron Works, Warren, Pa.  
**Keesler, E. Co.** Williamsport, Pa.  
**Schofields, J. S. Sons Co.** Macon, Ga.  
**York Mfg. Co.** York, Pa.  
**Soapmakers' and Butchers' Mchys.** Dopp, H. Wm., & Son, Buffalo, N. Y.  
**Soldier.** Bierle Thee, & Son, St. Louis, Mo.  
**Ryan, J. J., & Co.** Chicago, Ill.  
**Speaking Tubes.** Boley, Chas. H., & Co., Chicago, Ill.  
**Electrical Material Co.** Baltimore, Md.  
**Spring.** (Bicycle Saddle, Machinery, Railway and Spiral.) Boley, Chas. H., & Co., Chicago, Ill.  
**Boston Belting Co.** Boston, Mass.  
**Cary Spring Works.** New York, N. Y.  
**Craft Spring Co.** A., Pittsburgh, Pa.  
**Latrobe Steel & Coupler Co.** Philadelphia, Pa.  
**Ludlow-Saylor Wire Co.** The, St. Louis, Mo.  
**Spelter.** Bierle Thee, & Son, St. Louis, Mo.  
**Spirulators.** (Automatic.) Bailey-Lebby Co., Charles on, S. C.  
**General Fire Extinguisher Co.** Providence, R. I.  
**International Sprinkler Co.** Philadelphia, Pa.  
**Pfleider & Henger Mfg. Co.** St. Louis, Mo.  
**Stairways.** (Iron.) Lykes, John, Birmingham, Ala.  
**Stamp Mills.** Mecklenburg Iron Works, Charlotte, N. C.  
**Standpipes.** Birmingham Boiler Works, Birmingham, Ala.  
**Hartley Boiler Works.** Montgomery, Ala.  
**Keesler Co.** E., Williamsport, Pa.  
**Means & Fulton Iron Works.** Birmingham, Ala.  
**Virginia Bridge & Iron Co.** Roanoke, Va.  
**York Mfg. Co.** York, Pa.  
**Steam Gauges.** American Steam Gauge & Valve Mfg. Co., Jamaica Plain, Mass.  
**Crosby St. Gage & Valve Co.** Boston, Mass.  
**Lankenheimer Co.** Cincinnati, O.  
**Steam Filters and Supplies.** General Fire Extinguisher Co., Providence, R. I.  
**Steam Heating.** General Fire Extinguisher Co., Providence, R. I.  
**Keesler Co.** E., Williamsport, Pa.  
**Peck-Hammond Co.** The, Cincinnati, O.  
**Warren Webster & Co.** Camden, N. J.  
**Steam Shovels.** [See Dredges and Excavators.]  
**Steam Superheaters.** Power Specialty Co., New York, N. Y.  
**Steam Traps.** American Trap Co., Detroit, Mich.  
**Brown, James & Co.** Pittsburgh, Pa.  
**Haines Co.** W. S., Philadelphia, Pa.  
**Mason Regulator Co.** Boston, Mass.  
**Startevant Co.** B. F., Boston, Mass.  
**Wright Mfg. Co.** Detroit, Mich.  
**Steamship Lines.** Atlantic Transport Co., Baltimore, Md.  
 My Line, Baltimore, Md.  
**Merchants & Miners Trans. Co.** Baltimore, Md.  
**Richmond & York River Line.** Baltimore, Md.  
**Steel.** (Manufacturers of.) American Sheet Steel Co., New York, Y.  
 Chester Steel Casting Co., Philadelphia, Pa.  
**Latrobe Steel Co.** Philadelphia, Pa.  
**Steel Couplers.** (Automatic.) Latrobe Steel & Coupler Co., Philadelphia, Pa.  
**Steel Rods.** (Polished.) Finished Steel Co., The, Youngstown, O.  
**Stills.** (Turpentine.) McMillan Bros. Co., Mobile, Ala.  
**Stokers.** (Mechanical.) Washington Machine Co., Pittsburgh, Pa.  
**Stoves, Ranges, etc.** Hutchinson Bros., Baltimore, Md.  
**Street Lamps.** Dietz Co., B. E., New York, N. Y.  
**Structural Steel and Iron.** American Bridge Co., New York, N. Y.  
 Bartlett, Hayward & Co., Baltimore, Md.  
 Belmont Iron Works, Philadelphia, Pa.  
 Columbia Bridge Co., Pittsburgh, Pa.  
 Girard Boiler & Mfg. Co., Girard, O.  
 Johnson & Kinderkötter, Richmond, Va.  
**National Skylight & Construction Co.** New York, N. Y.  
 Gaff, W. L. & Sons, Pittsburgh, Pa.  
 Schreiber L. & Sons Co., The, Cincinnati, O.  
 Virginia Bridge & Iron Co., Roanoke, Va.  
**Studs, Nuts.** Bowes & Townsend Co., Philadelphia, Pa.  
 Miles, Franklin S., Philadelphia, Pa.  
 Milton Mfg. Co., Milton, Pa.  
**Sugar Mill Machinery.** Wolf Co., Fred. W., Chicago, Ill.  
**Switchboards, Switches, etc.** Electrical Material Co., Baltimore, Md.  
 Smith, Sem' J. & Co., Charlotte, N. C.  
 Telephone Mfg. Co. of Sumter, Sumter, S. C.  
 Western Electrical Supply Co., St. Louis, Mo.  
 Westinghouse Electric & Mfg. Co., Pittsburgh, Pa.  
**Tanks.** (Iron and Steel.) Bartlett, Hayward & Co., Baltimore, Md.  
 Birmingham Boiler Works, Birmingham, Ala.  
 Caldwell Co., W. E., Louisville, Ky.

## Corliss Engines

High Pressure or Condensing.

**Corliss Compound Steam Engines.**  
**Corliss Engines for direct connected Generators.**



HIGH-DUTY COMPOUND PUMPING ENGINE FOR WATER WORKS.

**Berry Safety Boilers** Economizes Space, Fuel, Maintenance, Simple and Durable.

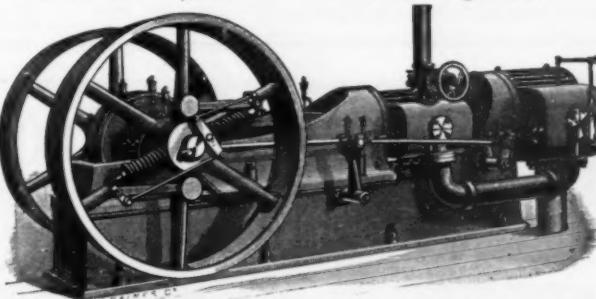
Robt. Wetherill &amp; Co., Chester, Pa.

## Phoenix Iron Works Co.

Meadville, Pa.  
U. S. A.

### Dick & Church Automatic Cut-Off Engines.

Simple, Compound and Triple Expansion. Belted, Direct Connected. 50 to 800 Horse Power.



### High Grade Boilers of Various Types.

COMPLETE POWER PLANTS A SPECIALTY.

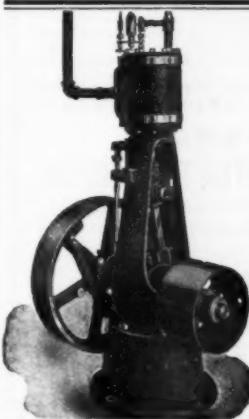
PITTSBURG, 401 Ferguson Bldg. PHILADELPHIA, 631 Arch St. NEW YORK—15 Cortlandt St. BALTIMORE, MD. Chicago—1409 Fisher Bldg.

## A POOR ENGINE

loses money for you every day. If you want to increase your profit and cut down your expenses, why not order a

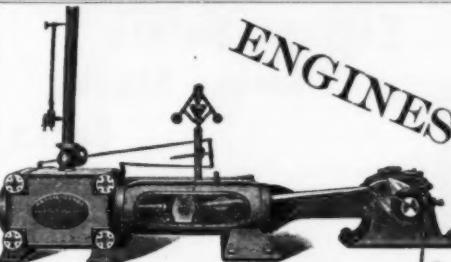
## HILL High-Speed Automatic Engine

then you have the best and things will begin to come your way. Try it. Catalog "N" and prices for the asking.



WM. E. HILL &amp; CO.,

North Park St., KALAMAZOO, MICH.



CORLISS AND SLIDE VALVE ENGINES, HOISTING ENGINES, AIR COMPRESSORS, DREDGE MACHINERY, COMPLETE POWER PLANTS A SPECIALTY.

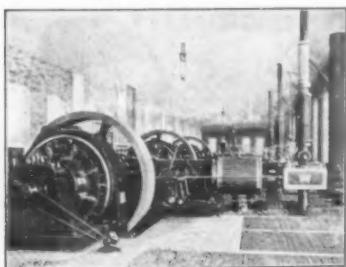
**HARDIE-TYNES FOUNDRY & MACHINE COMPANY,**  
Manufacturers, BIRMINGHAM, ALA.

## SOUTHWARK FOUNDRY & MACHINE CO.

PHILADELPHIA, PA.

Porter-Allen Automatic Engines, Blowing Engines, Centrifugal Pumps, Weiss Counter-Current Condensers.

**Harrisburg**  
Harrisburg FOUNDRY & MACHINE Works, Engines  
HARRISBURG, PA., U. S. A.



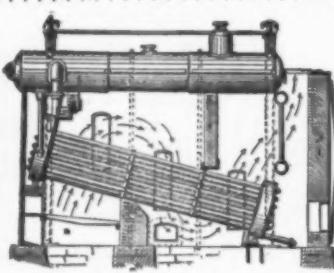
AUTOMATIC  
Self-Oiling  
**ENGINES**  
for  
Electric Service.  
THE BALL ENGINE CO.  
ERIE, PENNA.



**Boilers and Engines,  
HEATERS AND TANKS.**

Manufactured by THE BROWNELL & COMPANY, DAYTON, OHIO. P. O. Box 912.  
The Greensboro Supply Co., Greensboro, N. C., Selling Agts. for N. & S. Carolina & Georgia.

**THE BABCOCK & WILCOX CO.**  
85 LIBERTY ST.  
NEW YORK  
CABLE ADDRESS  
NEW YORK  
"GLOVEBOXES"  
ALL FOREIGN OFFICES  
"BABCOCK"  
WATER TUBE  
STEAM  
BOILERS  
SEND FOR OUR BOOK "STEAM"  
BRANCH OFFICES  
ATLANTA, GA.  
CINCINNATI, OH.  
CLEVELAND, OH.  
CHICAGO, IL.  
NEW ORLEANS, LA.  
MONTGOMERY, AL.  
PIERRE, SD.  
PITTSBURGH, PA.  
EMPIRE BLDG.  
MEXICO CITY  
CIGAROGA BLDG.  
AVENIDA JUAREZ  
HAVANA, CUBA  
BEN CALLE DE LA HAVANA



**HAMMOND  
PATENT WATER TUBE BOILER.**

The most economic boiler on the market.

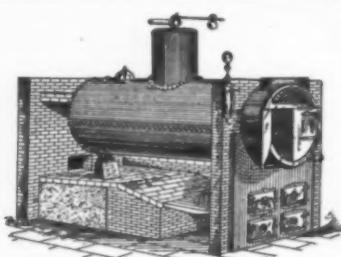
"THE QUICK STEAMER."

HIGH GRADE BOILERS OF ALL KINDS.

Stills, Stand Pipes, Steel Stacks, Etc.

Tankage Promptly Supplied.

ALWAYS RELIABLE.  
HAMMOND IRON WORKS,  
WARREN PA., U. S. A.



**Engines, Boilers,  
Smoke Stacks,  
Tanks,**

Injectors, Inspirators,  
Saw Mill Machinery,  
Shafting, Pulleys,  
Hangers, Etc.

**J. S. SCHOFIELD'S SONS CO.,**

**MACON, GA.**

**HARTLEY'S BOILER WORKS,**

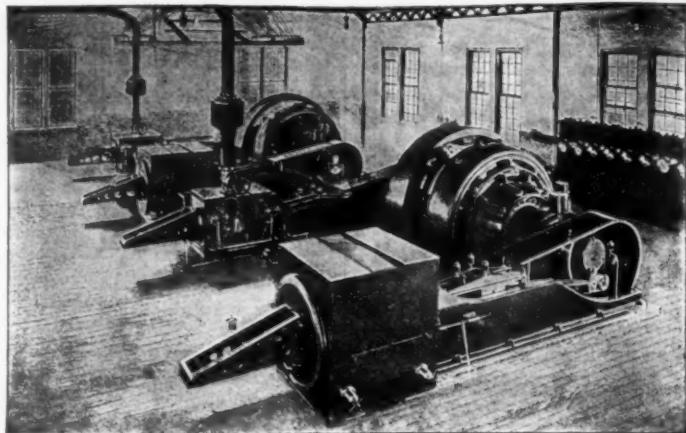
**Boilers, Stand Pipes, Tanks,  
Smoke Stacks, etc., etc.**

**MONTGOMERY, ALA.**

**ORIGINAL**

**GEO. H. CORLISS &  
GREEN-WHEELOCK ENGINES -  
INTERNATIONAL POWER CO., PROVIDENCE, R. I.  
OPERATING CORLISS STEAM ENGINE WORKS  
U. S. A.**

We furnish complete Steam Plants  
with guaranteed economy as low  
as 1 Pound of Coal Per  
H. P. Per Hour.



**McINTOSH & SEYMOUR  
Engines,**

**Mill Engines,**

**Electric Light Engines,**

**Electric Railway Engines,**

**All Types, Sizes and Speeds.**

**McINTOSH, SEYMOUR & CO.**

**AUBURN, N. Y.**

**26 CORTLANDT ST., NEW YORK, N. Y.**

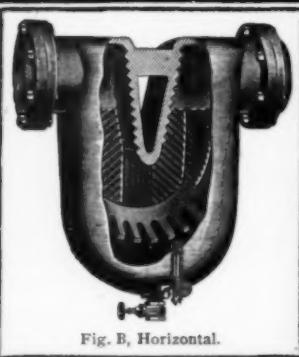


Fig. B, Horizontal.

**AUSTIN SEPARATOR CO.**  
155 Woodbridge St.  
DETROIT, MICH.

**Many Steam Separators  
Are Dear**

that are rated cheap. Unless they do their work properly, at all times, and not give trouble, the proposition of low price has no significance.

It is this alliance between thorough efficiency and right price which has made the Austin Separator a long-time favorite with steam users all over the United States and Canada.

Made in all styles and sizes, for all conditions of service. Will be shipped on thirty days' trial to prove our claim that it separates all moisture from live steam and removes all oil and other impurities from exhaust steam.

If not satisfactory, return at our expense. Shall we send one?

**BOILERS**

With River Holes Drilled after Plates are Bent and in Position, Tanks and Sheet Iron Works, Engines, Cotton Gins and Presses. Machinery for Fertilizer Works and Phosphate Washers, Asbestos Magnesia Pipe Covering and Magnesia Cement Felt for Boilers, Domes, Steam Piping, etc.

**VALK & MURDOCH IRON WORKS, Charleston, S. C.**

**BOILERS, TANKS, PENSTOCKS,  
FEED WATER HEATERS,**

General Steel Plate Construction.

**GEM CITY BOILER CO.,** Dayton, Ohio.



NOTICE THE BLADES—HAVE YOU?  
The "CHALLENGE" IS THE CLEANER  
THAT CLEANS.

The cleaning blades and their controlling springs are the only parts that wear out, and these parts are always obtainable at short notice. They can be sent by mail at small cost.

**THE CHALLENGE TUBE CLEANER CO.**  
63 Market Street, Lowell, Mass.

**HAZELTON WATER TUBE BOILERS.**  
THE HAZELTON BOILER CO., Sole Props. & Mfrs., Rutherford, N. J.

SEXTON & ROBBINS CO., Southern Selling Agents, Charlotte, N. C. See "Ad." next week.

**STEAM**

The  
Spe  
Bolts di  
A power  
A simpl  
The gre

WHIT

Spa

Bolts di

A power

A simpl

The gre

XUM

## CLASSIFIED INDEX OF ADVERTISERS.

**Water-Works and Sewerage.**  
Flint & Walling Mfg. Co., Kendallville, Ind.  
Nicol T. W. Mobile, Ala.  
Wood, R. D. & Co., Philadelphia, Pa.

**Weighing Machine.** (Automatic.)  
Automatic Weighing Machine Co., Boston, Mass.

**Well Contractors.** (Oil, Artesian, etc.)  
Andrews, Perry, & Bro., Atlanta, Ga.  
Austin Mfg. Co., F. C., Harvey, Ill.  
Bacon Air Lift Co., New York, N. Y.  
Cook Well Co., The, St. Louis, Mo.  
Gould, F. M., Richmond, Va.

Hughes Specialty Well Drilling Co., Charleston, S. C.

**Well Drillers.** (See Well Tools and Supplies.)

**Well Tools and Supplies.** (Artesian.)

Andrews, Perry, & Bro., Atlanta, Ga.  
Austin Mfg. Co., F. C., Harvey, Ill.  
Bacon Air Lift Co., New York, N. Y.  
Cook Well Co., The, St. Louis, Mo.

Gould, F. M., Richmond, Va.

Hughes Specialty Well Drilling Co., Charleston, S. C.

Loomis & Nyman, Tiffin, O.

Williams Bros., Ithaca, N. Y.

**Wheelbarrows and Trucks.**

Jackson Mfg. Co., Harrisburg, Pa.

Kilbourne & Jacobs Mfg. Co., Columbus, O.

**Whistles.** (Chimes, Sirens, etc.)

American Steam Gauge Co., Jamaica Plain, Mass.

Crosby Steam Gauge & Valve Co., Boston, Mass.

Lunkenheimer Co., Cincinnati, O.

**White Lead.**

French, Samuel H., & Co., Philadelphia, Pa.

**Windlasses.**

American Ship Windlass Co., Providence, R. I.

**Windmills.**

Flint & Walling Mfg. Co., Kendallville, Ind.

**Window Guards.** (Wire) [See Wire Guards.]

**Wire Cloth.** (Iron Steel, Brass, etc.)

Caldwell, H. W., & Sons, Chicago, Ill.

Meyers, Fred, J., Mfg. Co., Hamilton, O.

New Jersey Wire Cloth Co., Trenton, N. J.

**Wire Goods.**

Balderson, H., & Son, Baltimore, Md.

Bolles Iron & Wire Works, J. E., Detroit, Mich.

Dow Wire Works Co., Louisville, Ky.

Dufur & Co., Baltimore, Md.

Ingalls, Wm., Wire & Iron Works, Detroit, Mich.

Struthers, Wells & Co.

WARREN, PA.

N. Y. Office, 26 Cortland St.

Phila. Office, Fidelity Mutual Bldg.

Baltimore Office, 110 S. Howard St.

**Wire Guards.**

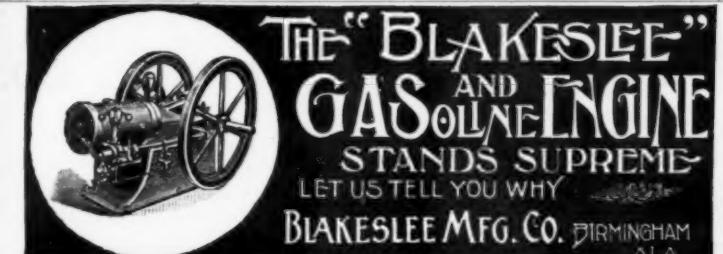
Balderson, H., & Son, Baltimore, Md.

Bolles Iron & Wire Works, J. E., Detroit, Mich.

Dow Wire Works Co., Louisville, Ky.

Dufur & Co., Baltimore, Md.

Ingalls, Wm., Wire & Iron Works, Detroit, Mich.



**The "B & C" FRICTION CLUTCH PULLEY (PATENTED)**

Specially Designed For Gas, Gasoline and Oil Engines.

Bolts directly on engine fly-wheel.

A powerful grip combined with a positive release.

A simple mechanism enclosed in a dust-proof case.

The greatest ease of operation and adjustment.

Write for catalogue and prices.

WHITMAN MANUFACTURING CO., Garwood, New Jersey.



**Don't Take Chances:**

Forestall the boiler accident which may occur at any moment, or which may never occur. A

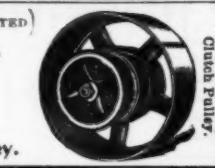
**WRIGHT IMPROVED SAFETY WATER COLUMN**

is the guarantee that it won't. They are always on guard and attract attention in the event of a possible emergency. Moreover, they are fuel and boiler repair economizers, as well as safeguards. Shall we send you the particulars?

**WRIGHT MANUFACTURING CO.**  
29 WOODBRIDGE ST. DETROIT MICH.

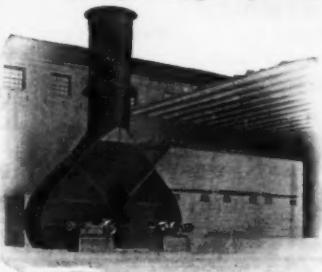
**STEAM SUPERHEATERS**

HIGH DUTY HYD. RAMS,  
ARMORD PUMP VALVES  
Power Specialty Co.  
NEW YORK.



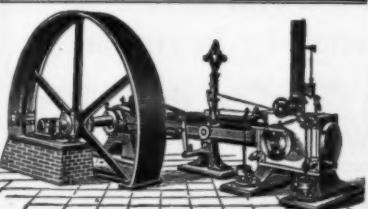
**MECHANICAL DRAFT.**

Our way is the right way.



**AMERICAN BLOWER CO.,**  
DETROIT, MICH.

New York, 141 Broadway. Chicago, 1550 Marquette Bldg. London, 70 Gracechurch St.



**Corliss, Slide Valve & Holisting Engines,**  
BOILERS OF ALL STYLES AND SIZES.

**THE MURRAY IRON WORKS CO.**  
BURLINGTON, IOWA.  
Incorporated February 1, 1870.

**SMITH-COURTNEY CO.**

Richmond, Va.

SOUTHERN AGENTS FOR THE

**Improved Bates Corliss Engine**

FROM 50 TO 1000 HORSE-POWER.

THE ENGINE for Cotton Mills and Large Factories.

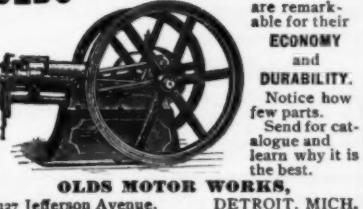
Also full line of Engines, Boilers, Iron and Woodworking Machinery and Pumps. Largest stock of Railroad, Mine and Mill Supplies in the South.

**OLDS GASOLINE ENGINES**

are remarkable for their ECONOMY and DURABILITY.

Notice how few parts.

Send for catalogue and learn why it is the best.



OLDS MOTOR WORKS,  
1327 Jefferson Avenue, DETROIT, MICH.

**Cold**

**Punched**  
**Nuts!**



We want your trade in Cold Punched Nuts—Plain, Chamfered, Trimmed and Reamed, Finished and Semi-Finished.

They are made of Double Refined Bar Iron, true to size and well finished.

It will pay you to get our prices.

The Milton Mfg. Co., Milton, Pa.

**NEWPORT NEWS**

**Shipbuilding and Dry Dock Co.**

WORKS AT NEWPORT NEWS, VA.

(ON HAMPTON ROADS.)

Equipped with a Simpson Basin Dry Dock, capable of docking a vessel 600 feet long, drawing twenty-five feet of water, at any stage of the tide.

Repairs made promptly and at reasonable rates.

**SHIP AND ENGINE BUILDERS.**

For estimates and further particulars address,

C. B. ORCUTT, President,  
No. 1 BROADWAY,

NEW YORK.

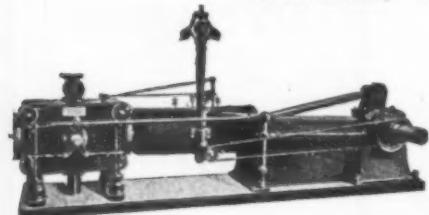
**Coggins and Mac Bryde,**  
Manufacturers' Agents.

LONG DISTANCE C. & P. TELEPHONE.  
Gate Valves for Steam, Water, Gas, etc. Fire Hydrants. Cast Iron Water Pipe and Fittings, Pumps, Steam, Gas and Gasoline Engines. Steam, Power and Water-Works Supplies in General.

Continental Trust Bldg. Baltimore, Md.  
Southern Agents for EDDY VALVES, etc.

XUM

**SOUTHERN ENGINE & BOILER WORKS,**  
JACKSON, TENN.



—Builders of—

**Corliss Engines,**

**Slide-Valve Engines,**  
**Tubular Boilers and**  
**Saw-Mill Machinery.**

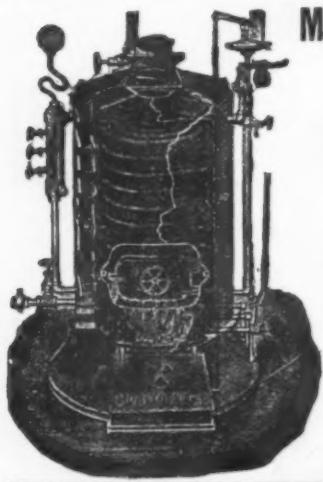
If you could buy  
another heater for  
half as much—

You'd still save  
money by buying a

**RICHMOND**  
Steam or  
Hot Water  
**HEATER**

Catalogue explains how durably constructed and how economical  
of fuel they are—send for it.

**THE RICHMOND STOVE CO.,** Norwich, Conn.  
NEW YORK, 1007-8 Park Row Building. BOSTON, 181 Tremont Street.  
PHILADELPHIA, 18-24 S. 7th Street.



**MONITOR STEAM GENERATOR  
MFG. CO.**

**Wrought-Iron Coil Boilers.**

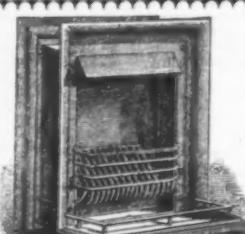
Positively the Greatest Fuel Economist  
of the Age for

**STEAM and HOT WATER HEATING BOILERS.**

OFFICE AND SALESROOM:  
BREWERS' EXCHANGE BUILDING,  
Fayette and Liberty Streets,  
BALTIMORE, MD.

U. J. BOSSLER, Manager.  
Home Office and Works, LANDISVILLE, PA.

Estimates Furnished for Heating on Application.



WE ARE READY TO SUPPLY THE  
**Wonderful Burnam Grate**

to dealers or to consumers where there is no agent. It  
warms two adjoining rooms on the same floor with **One**  
**Fire.** For instance—family and children's room, family  
room and parlor, or bed room or bath room, or hall, or two  
rooms of an office, etc. **One** fire does the work of **Two.**

What you save in the construction of the chimney more  
than pays for the grate and **saves half the fuel  
forever.**

The rich man's convenience,  
The poor man's friend.

Dealers, architects and builders wanted for agents in  
every city and town. Most liberal terms given and  
free, with full information. Address **BURNAM GRATE CO.,** Fayetteville, Tenn.



**Three Steam Traps in One:**

Three outlet valves—opening consecutively as the water fills the Trap—any one of them alone capable of discharging any ordinary inflow of water. Hence the name—

**The Wright  
Emergency Steam Trap.**

It acts instantly in emergencies. Never  
fails. But wastes no steam under ordinary  
conditions.

If you have a large amount of condensation to dispose of, you'll find satisfaction and economy in this Trap.

Attached to the steam separator it will  
in the event of an emergency (which may  
happen at any time or may never happen)  
save the engine from a disastrous and  
expensive wreck.

Write for all particulars.

**WRIGHT**  
Manufacturing Company  
29 WOODBRIDGE ST.  
Detroit, Mich.

**THE FAIRBANKS COMPANY,**  
BALTIMORE, MD.

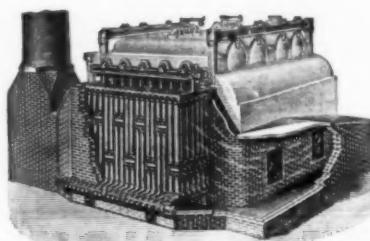
**Standard Scales.**

Valves, Supplies and Machinery,  
Gas and Gasoline Engines.

Send for New Illustrated Supply Catalogue.

THE CARDINAL PRINCIPLE OF BUSINESS ECONOMY—  
COST OF PRODUCTION.

**Green's Economizer**

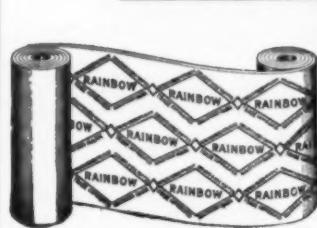


Sole Manufacturers in the U.S.A.

lessens such cost not only of  
the extent of **10 to 20 per**  
**cent.** on fuel bill, but in in-  
creased boiler capacity, de-  
creased boiler repairs— in-  
creased heat of feed-water—  
besides heating of mills, fac-  
tories, etc., without additional  
fuel. Our free descriptive  
booklet, "Green's Economizer,"  
explains our methods.

THE GREEN FUEL  
ECONOMIZER CO.  
MATTEAWAN, N. Y.

**THE BEST FLANGE PACKING MADE.**



**Rainbow Packing.**

**THE COLOR OF RAINBOW PACKING IS RED.**

Three rows of Diamonds in Black throughout the length  
of each and every roll. No baking or following up.

Thousands of Imitators. No Equal.  
Will Hold Highest Pressure.  
Don't have to use wire and cloth to hold RAINBOW.  
Can't Blow It Out.

Manufactured, Patented and Copyrighted Exclusively by

**The Peerless Rubber Mfg. Co.**

16 Warren Street, NEW YORK.

16-24 Woodward Ave., Detroit, Mich. 400-412 Common St., 201-207 Tschopitoulas St., New Orleans,  
La. 210-214 N. Third St., St. Louis, Mo. 171 Main St., Norfolk, Va. 804 W. Gervais St., Columbia,  
S. C. 202-210 S. Water St., Chicago, Ill. 709-711 Austin Ave., Waco, Tex. 51-53-55 College St., Char-  
lotte, N. C. Ninth and Cary Sts., Richmond, Va. 1212 Farnham St., Omaha, Neb. 17-23 Beale St., and  
18-24 Main St., San Francisco, Cal. 125 Congress St., West, Savannah, Ga. 634 Smithfield St., Pitts-  
burgh, Pa. 1601 to 1611 12th St., Denver, Col. 220 S. Fifth St., Philadelphia, Pa.

**THE ROBINSON  
OILS**

"they lubricate more, and outlast other oils."

**High-Grade,**  
**Cylinder, Engine, Spindle,**  
**Dynamo Oils.**

Oils for all types of Machinery.  
GREASES.

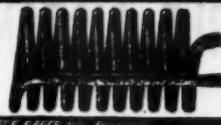
**WM. C. ROBINSON & SON,**  
217 South Street,  
BALTIMORE, MD.

**The Detroit Sight Feed Lubricators**  
not only give better service than other makes, but they  
last longer and require less repairs. They are of superior  
design, are extra strong and heavy, and each lubricator is  
tested at 300 pounds pressure to the square inch before it  
leaves the factory. Catalogue on application.

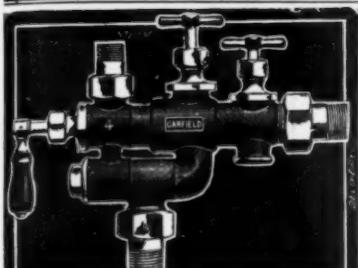
DETROIT LUBRICATOR CO., Detroit, Mich.



## COILS

Iron, Brass & Copper Pipe.  
Send for Catalogue.The National  
Pipe Bending Co.  
97 Lloyd St.  
New Haven, Conn.

## BENDS

The Garfield Double Jet  
INJECTOR

has no movable parts; requires no adjustment for varying steam pressures; works equally well on high or low lift, hot or cold water. Simple, easily attached, easily operated. Send for complete Injector Catalog.

The Ohio Injector Co.  
Wadsworth, Ohio.

## INSURE YOUR STEAM BOILERS

WITH THE

Maryland Casualty Company  
OF BALTIMORE.

Inspections made promptly, regularly and thoroughly by experienced men of proved ability. Agents throughout the United States.

Surplus and Reserve for Policyholders over \$2,250,000.00.

JOHN T. STONE, President.

## BOILERS

and COMPLETE POWER PLANTS,  
STACKS, EXHAUST STEAM HEATING, etc.E. KEELER CO., Williamsport, Pa.  
Send for Catalog.

## Birmingham Boiler Works.

Builders of Stand Pipes, Tanks, Stacks, Ore, Coal and Coke, Buggies, Laries, Lumber Trucks, Tram Cars. A large stock of new and second-hand Boilers, cheap.

WM. CRELIN, Proprietor,  
Ave A. Powell ave. and 24th st., Birmingham, Ala.Bonar Gauge  
Cocks

Stop that Drip! Drip!! Dripping!!!

Can be re-seated under boiler pressure, and last forever. Sent on 30 days' trial.

TRY A SET.

James Bonar &amp; Co., Pittsburgh, Pa.

**McCLAVE'S** Improved GRATE and ARGAND STEAM BLOWER. These appliances combine valuable features for burning the smaller sizes of hard and soft coal, such as Anthracite Coal, Birdseye, Buckwheat and Bituminous Slack, while the Grate Alone stands unequalled for burning the larger sizes of these fuels with natural draught. The Argand Blower gives EXCELLENT RESULTS in burning Spent Tan, Sawdust, Bagasse, etc. For full particulars send for other furnaces. Illustrated Descriptive Catalogue. McCLAVE, BROOKS & CO., Scranton, Pa.

**BLOWER SYSTEMS**  
STERLING BLOWER & PIPE MFG. CO.  
88 HUTCHINSON AVE., HARTFORD, CONN.

## FEED WATER HEATERS BY MAIL



Selling Feed Water Heaters BY MAIL is our specialty.

18 years as sellers and manufacturers is the price we have paid for our experience. Our improved machinery and methods for manufacturing greatly REDUCES THE COST AND YOU GET THE BENEFIT OF IT.

## THE IMPROVED BERRYMAN (KELLEY'S PATENT) WATER TUBE FEED WATER HEATER AND PURIFIER

Benj. F. Kelley & Son  
MANUFACTURERS

91 Liberty St., New York.

WAINWRIGHT FEED WATER HEATERS.  
SURFACE CONDENSERS.  
EXPANSION JOINTS.  
ARE MADE BY THE  
TAUNTON LOCOMOTIVE MFG. CO.—TAUNTON MASS.Fuel Oil  
Burners

for your boilers reduces your operating expenses.

The oil burners that will give most satisfaction in their economical burning of oil are manufactured by

Tate, Jones &amp; Co., Inc., Pittsburgh, Pa. SOUTHERN DEPARTMENT: Tate, Jones &amp; Co. of Louisiana, Ltd. 341 Carondelet St., New Orleans, La.

We manufacture Oil Burners, Tanks, Pumping Systems, Meters, etc., for complete plants.



## THE GEM OIL BURNER

BEST ON THE MARKET.

We furnish complete equipments for Burning Oil—the new fuel for the South and West. We manufacture

BOILERS, TANKS  
of any size for any purpose.  
STACKS AND STANDPIPES.

The Petroleum Iron Works Co.

Main Office and Works—Washington, Pa. Branch—Corsicana, Texas.

## An Electrical Attachment

with an American  
Thompson  
Improved  
Indicator.Original Thompson  
Indicator.

ADOPTED BY U. S. NAVY.

We make  
Valves, Gauges,  
Clocks,  
and all Steam  
Instruments.THE INDICATORS THAT MADE INDICATORS FAMOUS.  
HIGHEST AWARD at Paris Exposition, 1900. The only American Indicator to receive a medal. The gold medal awarded at Pan-American Exposition on Gauges, Pop Valves, Indicators and Engineering Specialties.

AMERICAN STEAM GAUGE &amp; VALVE MFG. CO.

NEW YORK. Address Factory, Jamaica Plain, Boston, Mass. CHICAGO.



Boston Blower Co.

HYDE PARK,  
MASS.Fans and  
Exhaustors,  
Direct Connected,  
Electric and Steam Outfits,  
Dry Kilns,  
Hot Blast Heating Apparatus.

HILL &amp; MORGAN, SALES AGENTS, BALTIMORE, MD.

## "PROVIDENCE" WINDLASSES. CAPSTANS

BUILT BY THE  
AMERICAN SHIP WINDLASS CO., Providence, R. I.

## A TRUE TALE

Let us tell you one of the many true stories of what can be done through the know-how and the right sort of apparatus:

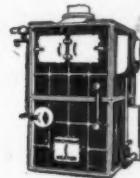
There is a plant up in New York State that used to run six boilers, all of the same size and at about the rating. Sometimes they were short of steam. We told them what we honestly thought could be done, and they believed us, and gave us the order to go ahead.

Months after the installation we called there and they told us that they were now able to run their plant using only four boilers and with only half the coal consumption, while doing the same work, and the cost to them of the apparatus to accomplish this was only a portion of the actual saving during one year's run.

Perhaps you do not know about our COCHRANE HEATERS, of which there are more than 1,000,000 H. P. in present service; or of our COCHRANE SEPARATORS. These latter, in oil service alone, are protecting more than 4,000,000 H. P. of boilers.

So you see we have had pretty nearly enough experience in this line to be able to help you if you are going to put up a new plant, or want to improve an old one.

WRITE FOR CATALOGUE 12-H.



## Harrison Safety Boiler Works

Allegheny Ave. and  
17th Street.

PHILADELPHIA, PA.

## Are You Alive?

to the fact that when you throw away your exhausted steam, valuable heat units go with it. The more exhausted steam you waste the more heat units you lose.



will use your exhausted steam and heat the water for your boilers. 210° to 212° is easily attainable and at the same time the water is freed of scale-producing elements. This device saves 10 to 20% in your fuel bill. Does this interest you?

We also manufacture STEAM AND POWER PUMPING MACHINERY for all purposes.

AIR COMPRESSORS  
VICTOR TURBINE WATER WHEELS  
OIL MILL MACHINERY AND  
FILTER PRESSES.

Stilwell-Bierce & Smith-Vaile Co.  
Dayton Ohio, U.S.A.

## VINCENT GATE VALVES

Have an adjustable wedge and  
DO NOT LEAK.  
SWEET & DOYLE, COHOES, N. Y.

## "LITTLE GIANT" REVERSIBLE PISTON AIR BORING MACHINE, No. 5.

Unexcelled for all classes of Wood Boring. Can be reversed running at full speed and bit withdrawn instantly.



Used Everywhere. Weight 14 lbs. Absolutely no vibration. Made entirely of steel. Can be operated in a bath of oil. Sent on trial—Express paid both ways if not satisfactory.

Most efficient and durable Air Boring Machine made.

Write for Catalog "F."

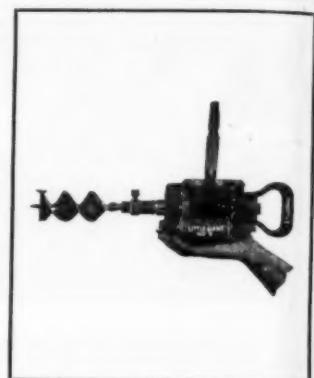
### STANDARD PNEUMATIC TOOL CO.

MANUFACTURERS OF

Air Drills, Hammers, Reversible Flue Rolling, Reaming, Tapping and Wood-Boring Machines, Motor Chain Hoists, and Pneumatic Tools and Appliances of every description.

General Offices and Works, AURORA, ILL.

Eastern Offices, 141 Broadway NEW YORK.



## Standard Traction Brake Co.

General Sales Office, 120 Liberty St., New York.

### Complete Power Brake Equipment for Traction Cars.

Air Brake Storage System.

Axle-Driven Air Compressors.

Independent Motor-Driven Air Compressors.

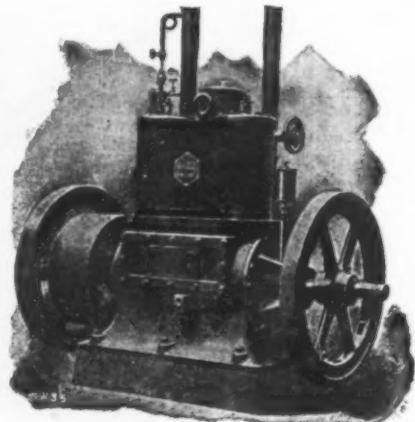
Magnetic Brake and Electric Car-Heating Apparatus.

Write for Catalogues and Prices.

Apparatus Manufactured by

## The Westinghouse Air Brake Co.

Pittsburg, Pa.



## Westinghouse, Church, Kerr & Co.,

Engineers, New York, Chicago, Philadelphia, Pittsburg, Detroit, Boston.

## Westinghouse Standard Engine

Built By

## The Westinghouse Machine Co.

Pittsburg—Designers and Builders—Chicago.

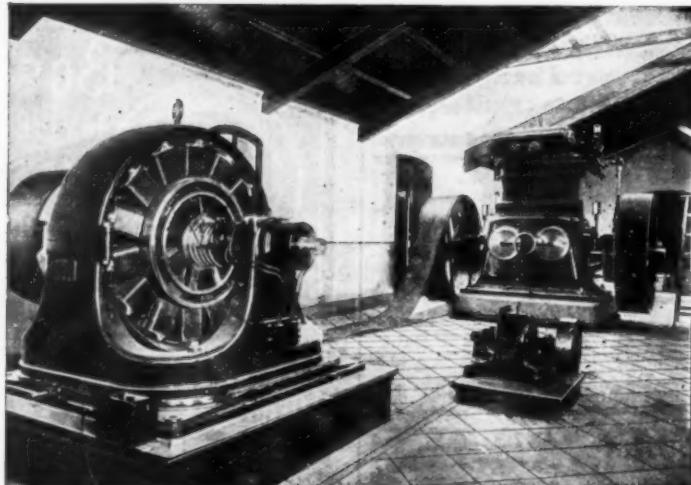
Write nearest office of  
Westinghouse, Church, Kerr & Co.

## Westinghouse Alternating Current Generators

for  
Lighting Service.

## Westinghouse Electric & Mfg. Co., Pittsburg, Pa.

Sales Offices in All Large Cities.



## Do your Belts slip?

Then why not use accurately cut or planed gearing and save a large percentage of your power which you are now wasting? You don't like the noise. Ah! That's where we come in. We are

### Specialists in Noiseless Gearing

Have been making our Patent Noiseless Pinions—**NEW PROCESS PINIONS**, we call them—for over twelve years. Hard work it was at first to get them just right, but we kept at it and profited by our experience. Now we have them right in every way. They are noiseless, durable, cleanly, make very little vibration, and don't appreciably wear the gear wheels they mesh with. And they are specified by the leading concerns in the country which have a demand for quiet running gearing. You know what that means. Let us send you catalogue with further details.

We Also Make Metal Gears.

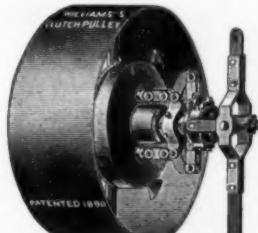
THE  
New Process Raw Hide Co.  
SYRACUSE, N. Y.

## PULLEYS

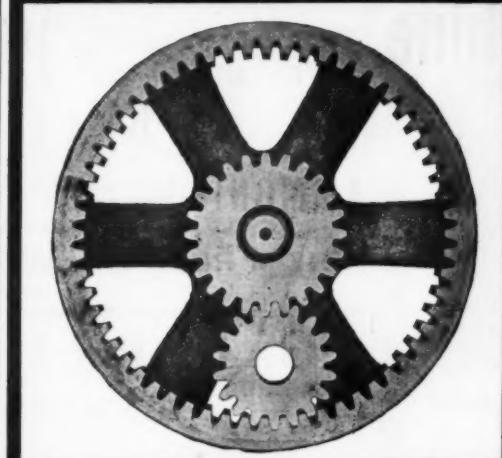


## BENT RIM

### The Strongest, Cheapest and Best CLUTCH PULLEY MADE.



MILTON F. WILLIAMS & CO.  
8th and Montgomery Sts.,  
ST. LOUIS, MO.



## The Highest Standard

of gear design is represented in Nuttal Cut or Planed Gearing. Adopted as standard by progressive manufacturing establishments. Correct in design, perfect in finish and reasonable in price.

WRITE FOR ESTIMATES.

R. D. NUTTALL COMPANY,

Fayette Street,

PITTSBURG, PA.



## T. B. WOOD'S SONS

CHAMBERSBURG, PA.

Manufacturers of

## POWER TRANSMISSION APPLIANCES

Including

### Rope Transmission.

Special attention paid to complete equipments of machinery for the transmission of power. Rope Drives designed and furnished to transmit any amount of power.

Send for Catalogue and Mention this paper.

## The "Jacobson" Friction Clutch Pulleys

### and Cut-off Couplings

FOR  
POWER PLANTS, PAPER MILLS,  
GAS ENGINES,

or any other place where a first-class clutch is required.

We also make a line of Air Compressors, Gas Regulators, Gas Soldering Furnaces, and all kinds of Power Transmitting Machinery.

Send for circulars and discounts.



We will have something entirely new in VISES after January 1st.

JACOBSON MACHINE MFG. CO., WARREN, PA.



SAGINAW MANUFACTURING CO.

Saginaw, Michigan, U. S. A.

New York Branch, 44 Dey Street.  
Chicago Branch, 35 S. Canal Street.  
Sales Agencies in all the Principal Cities.  
Cable Address: ENGRAVE, A B C & Lieber's Codes.



PULLEYS

Lightest Pulleys on the Market.  
The Ohio Pulley Co. MARION, OHIO.



OILLESS BEARINGS.  
Metalined Loose Pulley  
Bushings require no oil or  
other lubricant, either at  
the start or occasionally  
afterwards. Will run perfectly  
dry for years.

Beth American Metaline Co.  
West Ave. cor. W. 3d st.  
Long Island City, N.Y.  
Send for Loose Pulley  
Circular No. 5

If you wish to keep posted on the progress of the South, read the Manufacturers' Record. Price \$4 a year.



GOLDEN'S FOUNDRY & MACHINE CO., Columbus, Ga.  
Manufacturers of  
Send for Price List  
and  
Discount Sheet.

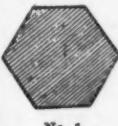
COUPLINGS, PILLOW BLOCKS, FLOOR STANDS, COLLARS, &c.

THE FINISHED STEEL CO., Youngstown, O.

Manufacturers of Polished Steel

SHAFTING.  
Piston Rods, Pump Rods, Valve Stems, Fine  
Machine Rods, Flats, Squares, and Hexagons for  
Engine Guides, Elevator Slides, Keys, Screws,  
Bicycle Chains, Etc.

V. A. MOORE & Co.,  
Sole Southern Representatives, ATLANTA, GA.

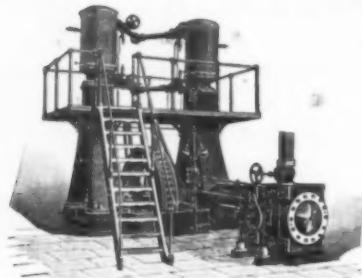


No. 1.

No. 2.

No. 3.

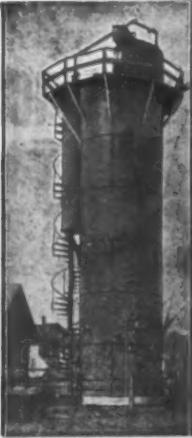
# The Standard York Machine



York Mfg. Co., York, Pa.

Manufacturers of Ice Making and Refrigerating Machinery and Ammonia Fittings.

The Kennicott



## Water Softener

A Machine for Softening Water for Boilers.



Our Proposition.—Send us a two-gallon sample of water in a glass demijohn. We will then make an analysis, free of charge to you, and submit an estimate of cost of treatment per thousand gallons.

Send for Booklet, 3d Edition.

Kennicott Water Softener Co.  
3567 Butler St., Chicago, Ill.

Ice-Making and Refrigerating Machinery. Eclipse Corliss Engines.

FRICK COMPANY,

Engineers, Builders,

NEW YORK OFFICE, Taylor Building, 39-41 CORTLANDT ST.

WAYNESBORO, PA.

40 to 1000 Horse-Power Made—Condensing, Non-Condensing and Compound.

Send for Ice Machine Circular. Send for Corliss Circular.

SPECIAL HIGH-SPEED AUTOMATIC ENGINES, STEAM BOILERS,

Send for our General Catalogue. TRACTION AND PORTABLE ENGINES, SAW MILLS.

THE MEANS & FULTON  
IRON WORKS

OFFICE & WORKS 4TH ST. AND 8TH AVE. NORTH, BIRMINGHAM, ALA.

MANUFACTURERS AND BUILDERS OF BOILERS, TANKS, STAINLESS PIPES AND BLAST FURNACES.

WORKERS IN SHEET IRON AND STEEL. ESTIMATES FURNISHED ON STRUCTURAL WORK IN BIRMINGHAM.

RO. PRESTON MEANS.  
PRES.  
JOHN H. MEANS.  
VICE-PRES.  
W. M. FULTON.  
MANAGER  
ADDRESS  
BOX 353

## Small Refrigerating Machines

Doing the Work of 1000 Pounds to 25 Tons of Ice Per Day.

Sixteen Sizes.

With arrangements for larger capacities if desired. Requiring not over one horse power per ton of refrigeration. Maintaining temperatures above or below freezing, as desired. Operated with any power at low cost. Automatic if run with electric motor and our thermostat. Quiet running. No ammonia taint. Catalogue.

The Singer Automatic Ice Machine Company,  
BRIDGEPORT, CONN., U. S. A.



## Our Improved Compression Ice AND Refrigerating Machines

are Economical and Simple in Operation, built from 1 ton up to 100 tons capacity.

"Single and Double Acting."

The machines now in operation prove it to be the most successful machine on the market. Write for information.

Healy Ice Machine Company,

Chicago, Ill.

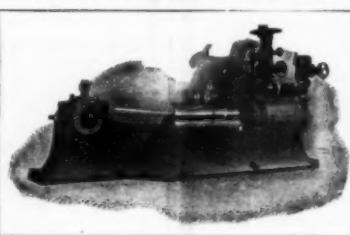
## THE LINDE ICE MAKING AND REFRIGERATING MACHINE.

AMMONIA CONDENSERS. DIRECT EXPANSION BRINE PIPING.  
CATALOG CHEERFULLY SENT ON APPLICATION.

THE FRED. W. WOLF CO.,  
139 to 143 REES ST., CHICAGO, ILL.

## BARBER COMPRESSOR BUILT BY A. H. BARBER MFG. CO.

WE  
MANUFACTURE  
COILS  
OF ALL KINDS



AMMONIA  
VALVES  
AND  
FITTINGS

## REFRIGERATING AND ICE MAKING MACHINERY

Built in twenty different sizes, from 2½ to 50 tons. The first machine built in 1894. Over 500 in successful operation January 1, 1900. Catalogue sent on application.

229-231 SOUTH WATER STREET, CHICAGO

THE VILTER MFG. CO.

832 Clinton Street, MILWAUKEE, WIS.

## Ice-Making and Refrigerating MACHINERY,

Corliss Engines, Boilers, Pumps, &c.  
Brewers' and Bottlers' Outfits.



## The LUDLOW VALVE MFG. CO.

TROY, N. Y., U. S. A.

Manufacturers of Fire Hydrants and Slide Gate Valves of All Sizes and for all Pressures and Purposes.

LUDLOW GOODS ARE RELIABLE.

SPECIFY AND INSIST UPON HAVING THEM.



None are Genuine without Our Name, which appears on every Valve and Hydrant we make and means

STANDARD OF MERIT.

Valves for Extreme High-Pressure Steam, Water, Gas, Oil, Ammonia, etc., a Specialty.

SEND FOR CATALOGUE.

## RELIANCE

Safety  
Water  
Columns

Fuel, Repairs, Stoppages,  
ECONOMY,  
SAFETY.

We urge our patrons to see that the name "Reliance" is cast on all columns. No other person or corporation is authorized to manufacture Reliance Steam Specialties.



The Reliance Gauge Column Co.

SOLE MFRS.,

CLEVELAND, O.

EDWARD J. ETTING.

39 Cortlandt St., Land Title Building,  
NEW YORK, N. Y. PHILADELPHIA, PA.

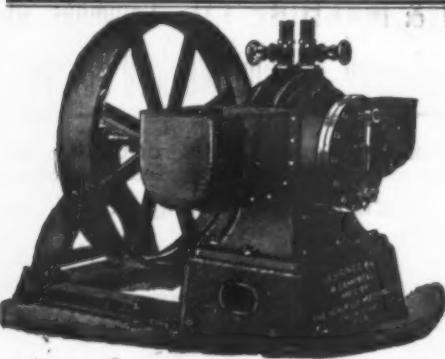
Foundry, Machine Shop and Rolling Mill

Equipment.

AGENTS:

Maryland Car Wheel Works, Car Wheels.  
"Mount Savage" Fire Brick.  
"Pridmore" Molding Machines for Iron and Brass  
Foundries.

"Whiting" Cranes, Cupolas, Air Hoists and other  
Foundry equipment.  
"Little Giant" Pneumatic Tools.



Results Guaranteed.

Our Improved

Compression Ice AND

Refrigerating Machines

are Economical and Simple in Operation, built from 1 ton up to 100 tons capacity.

"Single and Double Acting."

The machines now in operation prove it to be the most successful machine on the market. Write for information.

Healy Ice Machine Company,

Chicago, Ill.



## PLATE ICE is the BEST

No Core—Uniform Grain.  
No Cans—No Distilling Apparatus.  
Made from Filtered Water Without Distillation.  
Retains the Natural Taste of the water.  
Stores equally as well as the finest Natural Ice from the North.  
More Durable.  
More Economical to operate.  
The Best Paying System to install.  
Write us for Full Information and Reference List.

**REMINGTON MACHINE CO.,**  
WILMINGTON, DEL.

Builders of ICE-MAKING and REFRIGERATING MACHINERY for every purpose.



### MILLETT'S PATENT CORE OVEN.

No one who makes small cores can afford to be without it . . .

#### DOUBLE DOORS,

One closing the oven when the other is open.

#### Saves Fuel,      Saves Time.

SEND FOR CIRCULAR.

**MILLETT CORE OVEN CO., Brightwood, Mass.**

The ovens can be seen in the sample rooms of the S. Obermeyer Co., either in Cincinnati or Chicago; also J. W. Paxow & Co., Philadelphia, Pa.

BOOKS      NEWSPAPERS      CIRCULARS  
**RECORD PRINTING HOUSE**  
PAMPHLETS      CATALOGUES      PRICE-LISTS  
COR. EXCHANGE PLACE AND COMMERCE STREET, BALTIMORE, MD.

Consider this Principle  
ABOUT  
**The Wright Steam Separator**



It separates moisture from the steam. It doesn't condense the steam into water.

Most separators work on the latter principle by bringing the steam into contact with a needless amount of condensing surface.

In a Wright Separator the steam is not diverted from its natural course—steam goes up and all moisture and other impurities drop down. Perfect separation is accomplished without loss of steam.

A Wright Steam Separator guarantees thorough efficiency, lasting durability and the satisfaction that you paid a reasonable price.

Send for Catalog.

**Wright  
Manufacturing  
Co.**  
29 Shelby Street  
Cor. Woodbridge  
DETROIT, MICH.

If you wish to keep posted on the progress of the South, read the Manufacturers' Record. Price \$4 a year.

### Contoured Topographic Maps

of any locality, on scale of 400' to 1", with contour intervals at 5', will show: The best location for railway or highway, both in rolling country and difficult mountain work. It will show the possibilities of a stream for power or water supply, indicating dam sites, reservoir areas, storage capacity and canal location. It will show the possibilities of drainage for extensive swamp districts. It will show the best manner of handling an irrigation problem. It will show the "lay" of timber and mineral lands, and is the basis of all geological investigation. It will, in short, afford the information which the engineer and investor desire in the preliminary stages of every work of magnitude. The cost of such a map, scale 400' to 1", contours 5', is about \$50 per square mile. This office maintains a corps of expert topographers ready to be sent anywhere. Address

**JOHN W. HAYS, M. Am. Soc. C. E.**  
3 South Adams Street, PETERSBURG, VA.

#### HELP WANTED.

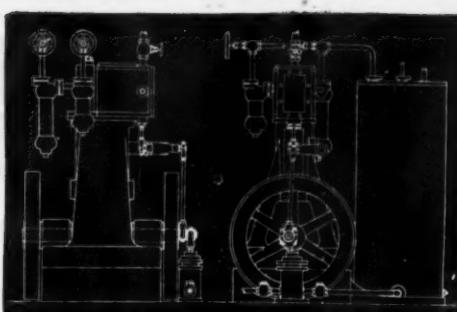
Advertisements under this head will be inserted at the rate of one cent a word for each insertion.

**WANTED.** A young, active, capable business man to keep books and take active part in a live manufacturing business (Wood). Willing to invest at least five thousand dollars. P. O. Box 598, Charleston, S. C.

**WANTED.**—Resident Salesman in New York City, by prominent Water Tube & Return Tubular Boiler Manufacturer. Address SALES-MAN, care Manufacturers' Record.

**CLIFF SAFETY AUTOMATIC FIRE HOSE REEL,**  
Manufactured by  
**CLIFF & QUIBERT CO.**  
198 West Broadway,  
NEW YORK CITY.  
Send for Catalogue.

If you wish to keep posted on the progress of the South, read the Manufacturers' Record. Price \$4 a year.



### Ice is Bulky

and spoils provisions by dampness and insufficient degree of cold. Opposed to this is our

### Carbonic Anhydride System

of refrigeration which insures dry, clean, odorless air at the low temperature required for successful refrigeration. Saves space; costs no more than ice—oftentimes less—and can be relied upon as being easy to operate and absolutely safe. Machines from a quarter-ton daily capacity up to the largest desirable size.

Write us direct or to our nearest branch.

**The Cochran Co., Lorain, Ohio.**

#### BRANCHES:

E. C. Moxham & Co., 80 Williams St., N.Y. City, East. Agts.  
E. C. Moxham & Co., Philadelphia, Pa.  
O. M. Campbell, 845 Liberty Ave., Pittsburgh, Pa.  
Fred Del Bondin, 312 Gravier St., New Orleans, La.  
E. B. Beck & Co., 108 Front St., San Francisco, California.  
Laufketter-Bendit M. E. Co., 510 Olive St., St. Louis, Mo.

The  
Cochran  
Company

Office  
and Works  
Lorain  
Ohio  
U.S.A.

Branches  
New York  
Philadelphia  
Pittsburg  
New Orleans  
San Fran-  
cisco

LINE ADV. SET

### "SOLVAY" CHLORIDE OF CALCIUM SOLID AND FLUID.

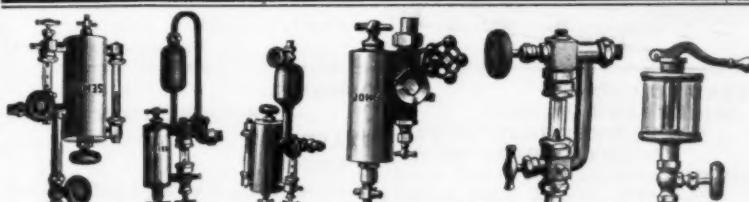
**The Best Drier for Air in Cold Storage Houses.**  
**Makes the Strongest Ice Machine Brine for the Least Money.**

Send for Calcium Circular and Prices.

New York Office:  
1012 Havemeyer Bldg.

**CARBONDALE CHEMICAL CO.**  
Carbondale, Pa.

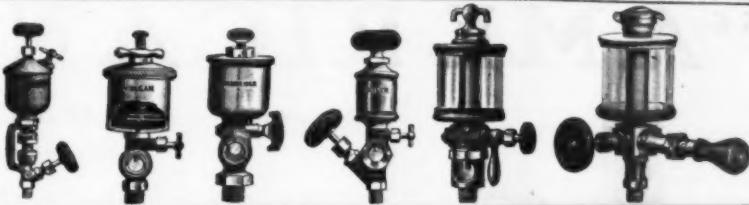
Boston Office:  
544 Tremont Bldg.



**THE LUNKENHEIMER LUBRICATORS** Are endorsed and liberally used by intelligent steam users everywhere. If you want perfect working and reliable cups specify LUNKENHEIMER make and order from your dealer. Write for catalog of Brass and Iron Engineering Appliances of superior quality.

**THE LUNKENHEIMER CO.**

Sole Makers and Patentees,      BRANCHES: New York, 26 Courtland St.  
CINCINNATI, O., U. S. A.      London, 35 Great Dover St., S. E.



### The I. & E. GREENWALD CO.

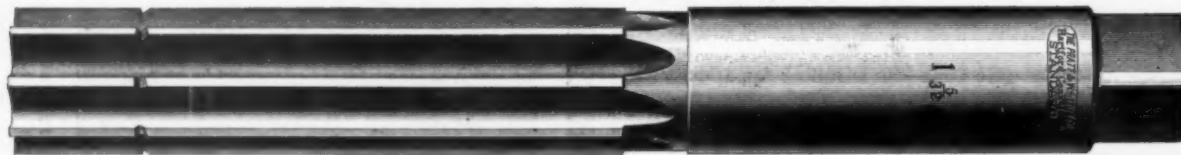
Engineers, Founders, Machinists  
and Millwrights.

### Steam Engines,

Shafting, Hangers, Pulleys,  
Sprocket Wheels, Chains,  
Etc. Headquarters for Mill  
Gearing of All Kinds and  
Sizes. Steam Power Plants  
Complete.

Write for Catalogue.  
720 E. Pearl St., CINCINNATI, O.

## REAMERS.



A complete line of Standard Reamers carried in stock. Hand, Shell, Rose, Locomotive Taper, Morse Taper and Taper Pin.

**PRATT & WHITNEY CO., Hartford, Conn, U. S. A.**  
SMALL TOOL DEPARTMENT.

Send for New Catalogue of Small Tools. You are cordially invited to visit our exhibit at the Pan-American Exposition, Machinery Building, Section 38.  
NEW YORK, 136-138 Liberty St. BOSTON, 144 Pearl St. CHICAGO, 42 S. Clinton St. BUFFALO, Corner Seneca and Wells Sts. PHILADELPHIA, J. W. Cregar, Agency, "The Bourse."  
MEXICO CITY, MEXICO, Robt. Boker & Co.

## SOLID ADJUSTABLE REAMERS.



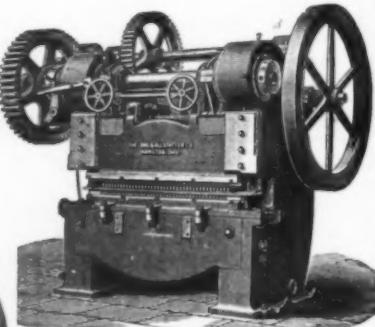
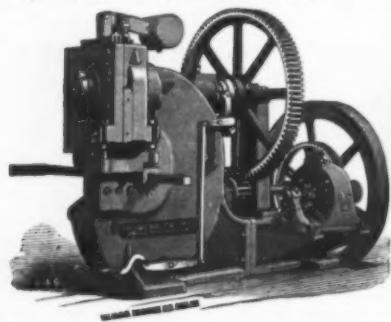
Made in Four Styles and All Sizes.

Fixed Caliper Gauges, Standard Measuring Machines and Adjustable Hollow Mills. Write for No. 6 Tool Catalog.

**THE JOHN M. ROGERS, BOAT, GAUGE & DRILL WORKS,**  
GLOUCESTER CITY, N. J., U. S. A.

**POWER PUNCHES  
AND SHEARS.**

BRAM COPING MACHINES,  
RIVETING MACHINES,  
TIRE WELDING MACHINES,  
DROP & HELVE HAMMERS, etc., etc.



DESIGNED AND MANUFACTURED BY  
**THE LONG AND  
ALLSTATTER CO.**  
HAMILTON, OHIO, U. S. A.  
Correspondence Solicited.

STEEL BUILDINGS,  
SHEET IRON WORK,  
GALVANIZED IRON WORK,  
SHEET COPPER WORK,  
DESIGN AND CONSTRUCT GAS  
PLANTS, CANE AND BEET  
SUGAR PLANTS,

ORNAMENTAL CAST AND  
WROUGHT IRON WORK,  
STAIRWAYS, BALCONIES AND  
ROOFS,  
ELEVATORS, GAS HOLDERS AND  
TANKS.

**BARTLETT, HAYWARD & CO., BALTIMORE, MD.**

**8 Bickford No. 0 Radial**

is peculiarly adapted for use in light and medium manufacturing and will be found to possess a great many more advantageous features for turning out this class of work than an upright drill. All we ask is comparison and you will be convinced.

RED BOOK FREE.

**The Bickford Drill & Tool Co.**  
CINCINNATI, OHIO, U. S. A.

AGENTS—P. H. McArdle, New Orleans, La.; Echols Smith Hardware Co., Birmingham, Ala.; The Fairbanks Co., Baltimore, Md.; W. E. Shipley, Philadelphia, Pa.; Prentiss Tool & Supply Co., New York, Buffalo and Boston; Brown & Zortman Machinery Co., Pittsburgh, Pa.; Marshall & Huschart Machinery Co., Chicago, Cleveland and Cincinnati; J. W. Wright & Co., St. Louis, Mo.; Henshaw, Bulkley & Co., San Francisco and Seattle, Washington; Robinson & Cary Co., St. Paul, Minn.; Scott Supply & Tool Co., Denver, Col.; The Canada Machinery Agency, Montreal, Canada; The A. R. Williams Machinery Co., Ltd., Toronto, Canada. The Henry Walk Co., Norfolk, Va.

**Die and Steel Forgings, Weldless Rings,  
Forged Tool Steel Spinning Chucks.**

Superior to steel castings. Our steel is made expressly and solely for us. Dies forged under our system will cut 10 to 25 per cent. more blanks than others before regrinding.

**HAY-BUDDEN MFG. CO., 254 North Henry St., Brooklyn, N. Y.**

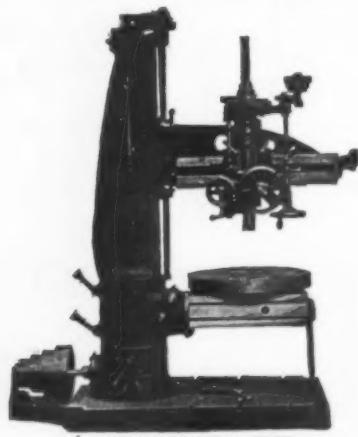
Advertise in the Manufacturers' Record.

**"AMERICAN" RADIALS**

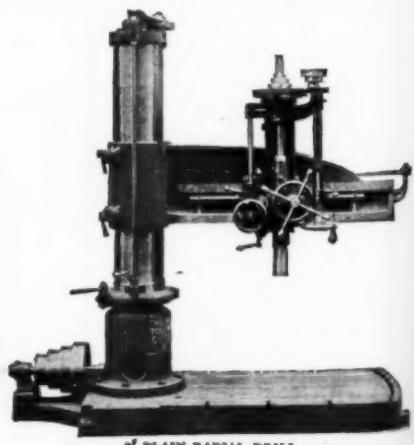
Were awarded the **GOLD MEDAL**, the HIGHEST AWARD  
at the PAN-AMERICAN.

Here are some of the reasons why:

Great convenience to the operator in manipulating head, back gears and tapping attachment.  
Back gears on the head, making communication direct to spindle.  
Sixteen speeds to spindle.  
No loose nuts or wrenches.  
There are other reasons, too, fully shown in our special circulars which are free to all.

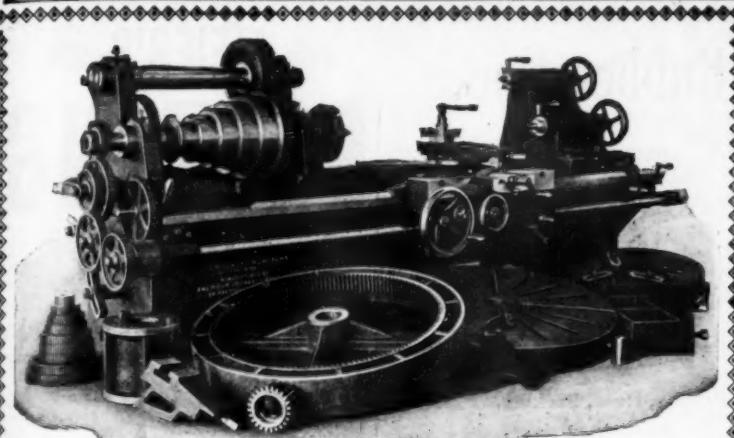


5' COMBINATION RADIAL DRILL.



5' PLAIN RADIAL DRILL.

**The American Tool Works Co.,**  
CINCINNATI, OHIO, U. S. A.

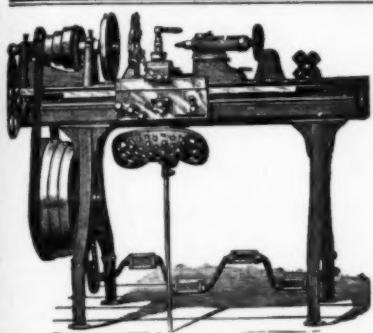


## Floor Space Cuts Quite a Figure

in most any manufacturing establishment, and especially in those that cannot be enlarged to meet new and greater requirements. That's another manufacturing problem that my New Heavy Pattern Double Spindle Lathe will help you to solve, because it gives you two complete, high-grade lathes on one base and doesn't take an inch more floor space than a common big lathe. My old, lighter pattern is a general jobbing shop favorite, from Maine to California, and the new heavy pattern is fast gaining the same position in manufacturers of all sorts where there isn't enough heavy work to keep a battery of big lathes profitably employed, but where a portion of the product calls for a big swing and good work. A powerful 26-48 inch swing manufacturing lathe, with double the screw cutting capacity of any ordinary lathe, 2½ inch hollow spindle and every other modern feature, at less than the cost of one big lathe, ought to be worth investigating, seems to me.

**J. J. McCABE, 14 Dey Street, New York.**

FOREIGN AGENTS—Schuchardt & Schutte, Berlin, Vienna, Brussels, St. Petersburg, Stockholm and Cologne. Chas. Churchill & Co., London, Birmingham, Manchester and Glasgow.



## LATHES

FOR THE  
Electrician,  
Experimenter,  
General Machine  
Shop Work.

Our lathes are furnished for steam or foot-power. Screw Cutting Lathes from 9" to 13" swing; elegant in design; superior in workmanship.

**W. F. & JOHN BARNES CO.**  
221 Ruby Street, ROCKFORD, ILL.  
CAREY MACHINERY & SUPPLY CO., Agents,  
BALTIMORE, MD.

### Range Manufacturers' Brake, New Style.

6 Foot Geared Hand and Power Range Brakes.



**J. M. ROBINSON & CO., Cincinnati, Ohio.**

**CHAS. LEFFLER & CO.**  
49-61 Clymer Street, BROOKLYN, N. Y.

MACHINERY FOR THE MANUFACTURE OF BRIAR PIPES.  
Musical String Machinery.

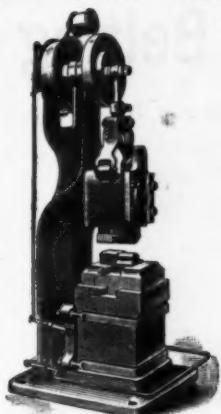


**SKINNER**  
Lathe, Drill & Planer  
CHUCKS.

We are pleased to  
mail 6"x9" Illustrated  
Catalog free.

New Britain, Conn.

## Dupont Power Hammer.



For Cotton Mill Repair Work, Machine Shops, Foundries and wherever a general Utility Power Hammer is needed. It has a large range of work, easy and simple to operate. Ask for Catalogue.

**The Dupont Manufacturing Co.**  
St. Johnsbury, Vt., U. S. A.

## Special Machinery Co.

Bridgeport,

Conn.

Designers, Builders and Operators of  
Automatic Labor-Saving Machinery  
and Special Tools

For Manufacturing Wire, Metal and  
other Goods

Machines for Hooks and Eyes, Pins, Paper Clips and Fasteners, Special Staples, Rings, or Loops, Buckle Wires or any possible shape.

Send Sample for Estimates.

**NO. 118**

**Automatic Labor-Saving Machinery**

**and Special Tools**

**From a Light Friction Disk DRILL to a 42-inch Back Geared Sliding Head DRILL**

**SEND FOR CAT-LOGUE.**

**THE "ABRASIVE" Emery Wheel**

## Imhauser's Watchman's Time Detectors

Cannot Fail.  
Write for Catalogue.



Made with 12 or 24 different keys. Contain all the modern improvements. Warranted in every way. Cannot be tampered with without detection.

MANUFACTURED BY

**E. IMHAUSER & CO., 206 Broadway, New York.**

## Royersford Foundry & Machine Co.

Builders of up-to-date

## Punch and Shearing Machines.

Well built. Honestly rated. They are money makers. Catalogue free.

ROYERSFORD, PA., U. S. A.



## "Abrasive" Emery Wheel

Run at its proper speed presents a cutting surface that will do clean and sure work; not once, but as long as there is a part of the wheel left. We want to tell you about the "ABRASIVE," why they wear so well and cut so fast. Nothing convinces like a trial.

Can't we send you one now?  
Write us.

## The Abrasive Material Co.

PHILADELPHIA, PA.

New Orleans Agents, C. T. PATTERSON CO.

SOLD BY LEADING DEALERS.

## Sand Papers



## THE Money-Saving Abrasive

Sharpest—that means fastest cutting.

Hardest—that means longest lasting—and these two qualities make

### CARBORUNDUM

the most economical of all grinding materials. Made in wheels and shapes for all abrasive purposes.

Write for booklet.

**The Carborundum Company,**  
Niagara Falls,  
N. Y.

## Our Catalog Free.

## Emery Wheels

Will Run Wet or Dry.

## Scranton Corundum & Emery Wheel Co.

Box 801, SCRANTON, PA.

### CORUNDUM WHEELS.

Polishers and Machinists' Supplies, Rub Stones, Emery Wheel Machinery, and Diamond Tools. Vitrified Wheel Co., Westfield, Mass.

## Rhoads Leather Belting

For high value our belting, grade for grade and price for price, invites comparison with any other. Still more, it invites the test of hard work. It has long backed up these claims. Any size up to 72 inch.

**J. E. RHOADS & SONS,**

239 Market Street,

Factory—WILMINGTON, DEL.

PHILADELPHIA, PA.



### The "Original Gandy"

Sewed Cotton Duck Belting.

Especially adapted for Mill Drives, Saw Mills, Cotton Gins, Cotton Presses, and for all places where belts are subjected to moisture or atmospheric changes, the "GANDY" stands paramount.

For further information, prices, etc., write

**The Gandy Belting Co.**  
BALTIMORE, MD.

SOUTHERN DIRECT AGENTS.—Whitney & Sloo Co., New Orleans, La.; Grafton & Knight Mfg. Co., Atlanta, Ga.; Keith, Simons & Co., Nashville, Tenn.; Smith-Courtney Co., Richmond, Va.; W. E. Caldwell Co., Louisville, Ky.; L. M. Bursey Mfg. Co., St. Louis, Mo.; Towner & Co., Memphis, Tenn.; Briggs Machinery & Supply Co., Dallas, Texas; W. H. Gibbes & Co., Columbia, S. C.; The Daily-Lebby Co., Charleston, S. C.; J. E. Rhoads & Sons, Wilmington, Del.

STRONGEST.

MOST DURABLE.

# LEVIATHAN

PHILADELPHIA, BOSTON, MAIN BELTING COMPANY, CHICAGO, BUFFALO.

## Eureka Fire Hose Co.



GOLD MEDAL  
Awarded at  
Pan American Exposition,  
1901.

13 Barclay St.,  
New York.

ORIGINAL MANUFACTURERS OF

### SEAMLESS RUBBER-LINED COTTON FIRE HOSE.

Also the Celebrated Brands of Eureka Mill Hose, Eureka Underwriter's Linen, Eureka Garden Hose, Eureka U. S. Brand Linen Hose, Plain and Rubber Linen, Traction Mill Hose, Gem Garden Hose. Eureka Cotton Machine Belting.

TEXTILE MILL SUPPLY CO., Charlotte, N. C.

WHITNEY & SLOO CO., Ltd., Agts., 108-112 N. Peters St., New Orleans, La.

"OUR NAME AND BRAND A GUARANTEE OF QUALITY."

## High Grade Rubber Goods,



Belting, Packing, Tubing,  
Springs, Valves, Gaskets,  
Mats and Matting,  
Rubber Lined Linen and  
Cotton Hose.

SEND FOR CATALOGUE, SAMPLES AND PRICES.

**N. J. Car Spring and Rubber Co.**

Main Office and Works, JERSEY CITY, N. J.

## Rubber Goods

OF THE  
HIGHEST GRADE.



Belting, Hose, Packing,  
Gaskets, Valves,  
Tubing, Mats, Matting.

MANUFACTURED BY

**BOSTON BELTING CO.**

JAMES BENNETT FORSYTH,  
Mfg. Agt. and Gen. Mgr.

BOSTON, 256 Devonshire St. NEW YORK, 100 Reade St.

**ALEXANDER BROS.  
BEST OAK BELTING.  
PHILADELPHIA.**

**Munson's  
Leather  
Belting**

Brands:

Eagle,  
Chicago,  
Dynamo.

If you are a user of BELTS the MUNSON BRANDS will meet your demands.

Our catalogue tells about them—a trial will prove their merits.

Pittsburg Rubber & Leather Co.  
16 to 18 Wood St.  
PITTSBURG, PA.

ARE YOU  
INTERESTED IN THE  
SOUTH?

If so, you cannot afford to miss reading the MANUFACTURERS' RECORD every week. We want your subscription. Price \$4.00 a year. Subscribe TO-DAY.

Headquarters for Commercial Men.

## New Atlantic Hotel,

J. HULL DAVIDSON, Manager.

Rates, \$2.50 and \$4.00.

Norfolk, Va.



## BURR STONES

For all purposes.  
Manufactured by us.

Also ROLLER MILLS, SMUT MACHINES and  
GENERAL MILL MACHINERY.

Established 1847.

**B. F. STARR & CO., Baltimore, Md.**

**JOS. MEIER'S SONS**

## BELTING

Made of centers, oak-tanned by slow process.

Factory: Newark, N. J.  
49 Dey St., NEW YORK.

## BELT TONIC

LEATHERINE-FILLED  
BELTING

IS THE BEST AND MOST  
DURABLE BELTING MADE

TRY IT

LEATHERINE

ROYAL  
EXTRA

CHAS. A. SCHIEREN & CO.

45-51 FERRY ST. NEW YORK.  
Chicago 46-48 S. Canal St. Pittsburgh 240 Smith Ave.  
Philadelphia 226 North 3rd St. Denver 1515 16th Street.  
Boston 319 High Street. Hanover Pickering 4  
TANNERYES, BRISTOL, TENN.

**"Camel" HAIR  
BELTING.**

ROSSENDALE-REDDAWAY BELTING & HOSE CO.  
NEWARK, N. J.

## Oil Burners.

Burners giving most economical results for sale.

Complete blue prints furnished for changing boiler furnaces from coal to fuel oil on receipt of \$2.00, or will contract to make the change satisfactorily.

I am a specialist in oil refining and oil refinery construction.

My work is along the line of obtaining economies in factory and mill work.

Your correspondence is solicited.

**R. C. EWER,**  
MECHANICAL ENGINEER,  
245 Broadway, New York City.



## Over Half the Mills

in the South that have been equipped with modern milling machinery have been built by us.

How could this be possible if we did not make the best machinery?

We are anxious to correspond with any one contemplating building a mill.

**The Wolf Company,**  
Manufacturers of Modern Mill Machinery,  
Chambersburg, Pa.



*"When you think  
of Belts, think of  
Williams."*

**I.B. WILLIAMS & SONS.**

Dover, N. H.

Branch House: 17 W. Lake St., Chicago, Ill.

## Dehner-Wuerpel Mill Building Co.

1807 to 1817 S. 3rd STREET, ST. LOUIS, MO.

### Mill Furnishers and Machinists.



St. Louis Coffee Roaster.

General Machinery of all descriptions.  
Flour Mill Supplies of all kinds in stock.  
Power Transmission Machinery.  
Design and Erect Coffee and Spice  
Mills Complete.  
Manufacturers of Coffee Roasters, Hullers, Etc.

General Machine Jobbing a Specialty.  
Correspondence Solicited.



### Our French Burr Mills

Are used by the leading mills because they are the Best. Investigation will convince you of their superiority. Catalog and Discounts on application.

**SPROUT, WALDRON & CO., Box 38, Muncey, Pa.**  
FLOUR MILL BUILDERS AND CONTRACTORS.



THOUSANDS OF

Millstones made of

**EMERY**

ARE IN USE.

PATENTED.

Send for Circular.

**STURTEVANT MILL CO., 116 Clayton St., BOSTON, MASS.**



Only two parts. Used with regular lag screws of any length.  
**DIAMOND EXPANSION BOLT**  
for fastening all kinds of ornamental iron work, railings, fire  
escapes, electrical work, &c., to brick, stone or any kind of masonry.  
Plainfield, N. J.

HENRY B. NEWHALL

**Felton's  
Mill  
Brushes**  
CATALOGUE FREE.  
S. A. Felton  
& Son Co.  
Manchester, N. H. &  
Boston.

**B. C. & D.**

**"Hoyt" Oak-Tanned Short Lap Leather  
Belting always gives satisfaction.  
The care exercised in its manufacture  
insures this.**

**FAYERWEATHER & LADEW,** Largest Manufacturers of LEATHER BELTING in the world. SOLE MANUFACTURERS.

Main Office and Factory, NEW YORK. Branches, CHICAGO and BOSTON.

SOUTHERN AGENTS:

Baltimore, Md....Carey Mchy. & Supply Co.	Cincinnati, Ohio....The Crane-Hawley Co.
Richmond, Va.....J. L. Lindsay.	Charlotte, N. C....Textile Mill Supply Co.
Norfolk, Va.....E. V. White & Co.	St. Louis, Mo.....Day Rubber Co.
Louisville, Ky.....Ahrens & Ott Mfg. Co.	Kansas City, Mo.....Crane Co.
Memphis, Tenn.....J. H. Coffin & Co.	New Orleans, La.....Simonds Mfg. Co., Ltd.
Nashville, Tenn.....J. H. Fall & Co.	Macon, Ga.....Mallory Mill Supply Co.
	Atlanta, Ga.....Atlanta Supply Co.

## Oak Leather BELTING

**T. E. PECHIN,  
MANUFACTURER,  
2154-56 Germantown Avenue,  
PHILADELPHIA.**

### THE "HIGGINS" MILL PICKS.

THE BEST ON EARTH OR NO PAY.  
We do not send our goods C. O. D. Thirty days' trial on old or new MILL  
PICKS. If our Mill Picks are not found to be the finest you ever used,  
RETURN THEM and we will pay the freight to and from your Mills.  
The "Higgins" Mill Picks are now in use in all parts of the  
World. Illustrated Catalogue free.

JOHN C. HIGGINS & SON, 169 W. Kinzie St., CHICAGO, ILL.



ONCE TRIED ALWAYS USED.

**A Strictly Short Lap Oak Tanned Belt.**

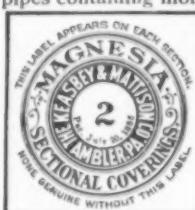
**BICKFORD & FRANCIS BELTING CO.,  
BUFFALO, N. Y.**

## Important Litigation Relating to Magnesia Covering Patents.

The Keasbey & Mattison Co., the owners of the patents for magnesia covering, have commenced a suit in the United States Circuit Court for the Southern District of New York against the Philip Carey Mfg. Co., George D. Crabs, J. E. Breese, Schoellkopf, Hartford & Hanna Co., J. F. Schoellkopf, Jr., James Hartford, W. W. Hanna, C. P. Hugo Schoellkopf and Jesse W. Starr to restrain the defendants from making and selling magnesia covering for boilers and steam pipes containing more than 50% of magnesia, and especially coverings containing 85% of magnesia.

The bill prays for a preliminary writ of injunction, to be continued during the pendency of the suit, and upon the final determination thereof to be made perpetual, and also demands an accounting and damages.

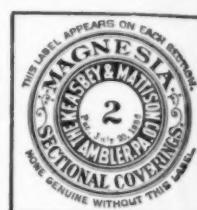
All persons are respectfully requested to refrain from purchasing covering infringing these patents, as such purchasing must of necessity lead to suit. Beware of Fraudulent so-called "Magnesia" Coverings as well as those infringing on patents.



**KEASBEY & MATTISON COMPANY, AMBLER, PA.**

NEW YORK, BOSTON, CHICAGO, WASHINGTON, ATLANTA, NEW ORLEANS,  
CLEVELAND, CINCINNATI, MILWAUKEE, MINNEAPOLIS.

There is only ONE Magnesia Sectional Covering, and it bears this label; all others are imitations.



## American Sheet Steel Company

Battery Park Building New York

Manufacturers of all varieties of

## Iron and Steel Sheets

Black and Galvanized, Plain and Painted  
Flat, Corrugated and "V" Crimped

Apollo Best Bloom Galvanized Sheets  
Wellsville Polished Steel Sheets

W. Dewees Wood Company's Planished Iron  
W. Dewees Wood Company's Refined Iron



### Paint Calks

If interested in a durable coating for exposed surfaces, investigate the merits of

### "Superior Graphite Paint."

Equally good for metal, wood or brick.  
Write for booklet.

**DETROIT GRAPHITE MFG. CO.**  
Detroit, Mich.

New York. Boston. Chicago.

**JOHN T. BAILEY & CO.**

MANUFACTURERS OF

## Bags, Rope and Twine

IMPORTERS OF BURLAPS.

PHILADELPHIA, PA.

OFFICE AND WORKS—Water and Tasker Streets.

When a File Bears Any One of these Three Trade Marks, it is a First-Class Article



**NICHOLSON FILE CO.**

PROVIDENCE, R. I., U. S. A.

Established 1891. Cable Address "CATLETT."

**CHARLES CATLETT,**  
Chemist and Geologist,  
Formerly of the U. S. Geol. Survey Lab.  
Examination and Report on Developed and Un-  
developed Properties.

MAIN OFFICE: STAUNTON, VA.  
Philadelphia Address: Booth, Garrett & Blair,  
406 Locust Street.

**GALENA-SIGNAL OIL CO.**

FRANKLIN, PA.

Successors to Galena Oil Company and  
Signal Oil Company, sole manufac-  
turers of the celebrated Galena  
Coach, Engine and Car Oils  
and Sibley's Perfection  
Valve and Signal Oils.

**Charles Miller,**  
PRESIDENT.

## THE BARRETT MFG. CO.

Philadelphia, Pa. St. Louis, Mo. New Orleans, La.

Manufacturers of the  
famous

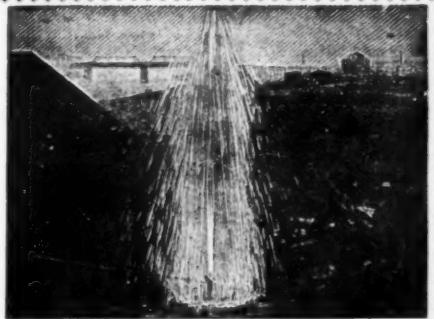


### "Black Diamond" Prepared Roofing.

Also the largest Distillers and Manufacturers of  
COAL TAR AND COAL TAR PRODUCTS in the  
World.

**ONE**  
Air  
Compressor  
Operates  
Several Wells.

Write for particulars.



**The Ingersoll-Sergeant Drill Company**

806 Witherspoon Bldg., Philadelphia, Pa. 26 Cortlandt Street, NEW YORK. Williamson Bldg., Cleveland, O.

**JOHN A. ROEBLING'S SONS CO.**  
**WIRE ROPE**  
GALVANIZED SHIP RIGGING, MINING, TILLER,  
ELEVATOR, TINNED, & COPPER ROPE, SASH CORDS.  
LARGEST WIRE ROPE WORKS IN THE WORLD.  
**IRON & STEEL WIRE OF EVERY KIND.**  
TELEGRAPH WIRE, HARD & SOFT COPPER WIRE  
INSULATED FOR ELECTRIC USE.  
WIRES OF IRON & COPPER, FENCE WIRE,  
SWEDISH IRON WIRE, CRUCIBLE STEEL WIRE.  
TRENTON, N.J. & 117 & 119 LIBERTY ST., N.Y.

# MANUFACTURERS' RECORD.

A WEEKLY SOUTHERN INDUSTRIAL, RAILROAD AND FINANCIAL NEWSPAPER.

VOL. XL. No. 25. 1  
WEEKLY.

BALTIMORE, JANUARY 9, 1902.

\$4.00 A YEAR.  
SINGLE COPIES, 10 CENTS.

## Manufacturers' Record.

RICHARD H. EDMONDS, President.  
THOMAS P. GRASY, Vice-President.

OFFICE: MANUFACTURERS' RECORD BUILDING  
BALTIMORE.

PUBLISHED EVERY THURSDAY BY THE

Manufacturers' Record Publishing Co.

RICHARD H. EDMONDS,  
Editor and General Manager.

THOMAS P. GRASY,  
General Staff Correspondent.

SUBSCRIPTION, - - - - \$4.00 a Year.  
TO FOREIGN COUNTRIES, - - 26s. 6d. a Year.

BALTIMORE, JANUARY 9, 1902.

### COPY FOR ADVERTISEMENTS.

**Advertising copy (changes or new  
advertisements) should reach us  
Saturday Morning to insure insertion  
in the issue of the following week.**

**For the first issue in the month  
we should receive copy by Friday  
Morning of the week preceding.**

Commenting upon the recent article in the Manufacturers' Record by Mr. F. E. Saward, the American authority on the coal trade, dealing with the progress of the coal-mining industry in the South during the past year, the News of Chattanooga, Tenn., says:

The article is an optimistic one as regards developments in mining circles for the coming year, and as the Manufacturers' Record is one of the most reliable trade and industrial publications printed, it is evident that the mining future of the State is constantly brightening, and is, at the same time, affecting other branches of industry.

### A Call to Carolina.

Gen. Joseph L. Stoppelbein, editor of the Spartanburg Truth, after a visit to the Charleston Exposition, is convinced that if a Chinese wall were placed around South Carolina the people of the State could exist without the balance of the world, as they could produce behind the wall all that is necessary for food, raiment and well-being of a happy people. Inspired by that thought, he writes the Charleston News and Courier suggesting the organization of a get-together club embracing the people of the whole State. He says:

We want to see the whole of the people of South Carolina living together as one happy family. Let us all meet together as brother to brother, bear each other's burdens, share each other's joys, defend each other and pledge ourselves to aid each other in every movement looking toward the upbuilding of South Carolina. Let us give more time to business and less to politics. Our business may slip away from us, but the politician we have with us always.

This, you may say, is good theory, but it lacks practicability. Very well—then let us get down to something like the practical part.

It is very generally conceded that the very best results are always attained by a thorough organization. We have given the matter considerable thought, and we believe that an organization can be effected.

General Stoppelbein suggests such an organization, under State auspices, as a board of trade, which shall be a center of activity for the development of the industrial and commercial in-

terests of the State and for the promotion of enterprises which shall add to its material wealth.

The suggestion is a practical one, though the feature involving preliminary organization through appointment by State authorities might tend to limit the efforts to remove the movement from politics. Still, if the business men of South Carolina or any other Southern State should come together with the determination to eschew all politics except that calculated to benefit the State, there will be little reason for the rather despairing sentiment that business may slip away, but the politician will always be there.

### The South and Self-Reliance.

Dr. Walker Lewis is saying some things to his brother Georgians that ought to stir them up. Georgia Methodism, he says, "assesses four cents a member for the education of the young and seems satisfied. It spends more upon tobacco before breakfast than it gives to education in a twelve-month." We do not wonder that he urges the Georgia Methodists to give their money to Emory College and the Baptists to Mercer. Hear him:

"Do our people know that one negro college for boys and girls in Atlanta has more endowment than Emory and Mercer and the University? Do they really know that another institution in Atlanta for colored girls is better equipped for teaching than is any college for white girls in the State? Do they really know and consider that the negro colleges in Georgia can buy all the property of other colleges of the Commonwealth and leave a balance that more than equals the endowment of Emory or Mercer? These are, nevertheless, facts. And yet there are 400,000 Methodists and Baptists in this Commonwealth beneath or back of these institutions—mostly beneath."

We are surprised if the facts are as given. The officers of these white colleges ought to show the energy that Booker T. Washington shows for Tuskegee. There is money to be had North or South. Let them go for it.—Independent.

Dr. Lewis is doubtless correct. But the Independent, in its comments as quoted above, shows how little it understands the situation. The comparative wealth of these negro schools is due to the philanthropists of the North, who, in this particular, carry to an extreme that phase of beneficence which prompts some folks to give freely to foreign missions, but nothing to home missions. These philanthropists, to whose sentimental fancy the negro has wonderfully appealed, have never evinced any great practical interest in the education of the poor of their own race who happened to live South. To the average man is thus given an impression that these great money-givers have a definite plan to aid the negro in so-called education which involves a careful avoidance of help in the education of the whites of the South. But if this be so, they are surely sowing the wind for the reaping of a whirlwind. With no real knowledge of the negro or of the character of education which suits him best, and beyond which for his own good he ought not to be forced, they have given heed to every appeal made for help for negro schools. It has, in fact, been a fad, and like many other fads, has been worked for all it was worth. The money given to Tus-

kegee and Hampton has been given for a good work, but Tuskegee and Hampton are exceptions, demonstrating in their very accomplishments the waste and wrong done in other directions.

The Independent says there is money to be had North or South for the advancement of the education of the whites. As far as the North is concerned, that money must be lying very low, if it is, indeed, in existence. However greatly the South would revere the memory of the Northern men who might pour their millions into its educational system for its strengthening and enlargement, particularly on industrial lines, we cannot escape a conviction that those millions are something of an *ignis fatuus*, in the chasing of which much time and much energy would be wasted and much Southern opportunity lost; for the chase would undoubtedly divert Southern men of wealth from their own duty in the premises.

The South is still poor. It requires many years for a people to recover from the destruction of the war entailing a loss at least five times as much as the aggregate capital of all the national banks of the United States today. At the same time, the South has done much in its poverty, not only for its whites, but for the negroes. It could possibly do more to advance education, and its people are being pressed in that direction by every active educator in that section. These men believe that for their own people the main reliance should be self-help, a powerful educational influence in itself. That self-help, while welcoming the voluntary co-operation of outside wealth, looks primarily to the liberality of Southern men themselves, whether they have made their fortunes in hard struggle in their own section or have accumulated elsewhere. The drains upon them made necessary by success have not permitted the rapid growth in them of that public spirit which has blessed other parts of the country. They have had hardly time to take in the actual facts about the necessities of the rising generation or to comprehend the significance for good of private generosity for the public welfare. But they are gradually working toward that conclusion, and patient, persistent publicity, uniting furtherance of practical, businesslike plans for the expenditure of money for real education where it is most needed, will in the end bring Southern wealth to the rescue in ever-increasing volume.

### The Drift of Negroes.

Rather a mistaken view of the census figures relating to the negro population of the country is had by the New York Sun. It says that in two States only—Mississippi and Alabama—does the colored population exceed the white population. There is an absolute mistake in that statement, inasmuch as Mississippi and South Carolina are the two States in which the negroes are in a majority of the popu-

lation. There is, moreover, a wrong deduction by the Sun regarding the relative decline of the negro population in such States as Maryland, Kentucky and Missouri, and its increase in Mississippi, Alabama and Florida, for it says:

In the States of the extreme South, in which the material condition of the colored race is least desirable, there has been the largest gain in population. Practically the whole increase is to be found in the Gulf, South Atlantic and Southwestern States, and not in those border States in which the opportunities and inducements to colored citizens are greatest. In the border States the colored voters are held socially in higher regard. The competition of colored labor is decidedly less, and by reason of the smaller percentages of colored residents, race antagonisms, based on fears of colored domination, are little known. Nevertheless, colored people from the extreme South do not seek homes in the border States. They do not move North. On the contrary, as the census figures indicate, they are moving southward, and but for newcomers from Northern States, there would be an actual falling off both in Kentucky and Maryland.

As a matter of fact, the census figures do not indicate that but for newcomers from Northern States there would be an actual falling off in the negro population both in Kentucky and Maryland. Nor do they indicate that negroes from the extreme South do not seek homes in the border States. The figures show, first of all, that between 1890 and 1900 the negroes in fourteen Southern States, from Maryland to Texas, and in the District of Columbia, increased in number from 6,710,582 to 7,835,073, or at the rate of 16.75 per cent., while in the rest of the country from 778,094 to 997,406, or 28.19 per cent. The actual increase of the negroes in Delaware, Maryland, Virginia, Kentucky, Missouri and West Virginia was but 85,496, or 65,227 less than the combined increase in New York, New Jersey, Pennsylvania, Ohio, Indiana and Illinois. The increase in New York—29,140—was 9733 more than that in Maryland and 3856 more than that in Virginia. The increase in Pennsylvania—49,249—was 29,842 more than that in Maryland and 38,440 more than that in West Virginia. Illinois' increase, which nearly equalled that of New York, was more than twice that of Missouri and 11,415 more than that in Kentucky, while Indiana's increase was 1240 more than that in Missouri. Massachusetts has now a larger negro population than Delaware, and Pennsylvania's negro population of 156,845 is within less than 5000 of Missouri's negro population.

This notable increase of the negro population in the North is slowly changing the figures of that class of the country's population in Southern States as far south as North Carolina and Tennessee, and is largely due to the migration of the less desirable class of Southern negroes to Northern cities, where they are becoming something of a nuisance, as recent events indicate. There is comparatively little opportunity in the North for the negro to obtain employment in lines for which he is practically fitted, and, as was recently pointed out in the Manufacturers' Rec-

ord in an elaborate analysis of the movement of the negro population, the drift of negroes to such States as Alabama, Florida, Mississippi, Texas, Arkansas and West Virginia is directly traceable to the industrial activities in those States, which offer negroes the chance to better their material condition.

#### Fooling with Figures.

Preliminary census figures of manufacturing in Tennessee have led some of the daily papers of that State to the unfortunate act of commenting upon the industrial progress of their respective communities to the disparagement of other communities, instead of all working together to ensure the State more progress. Among the first to resort to this disparagement was the Chattanooga Times, which reveals its inanity in making claims that the figures for Chattanooga are defective in that they cover only the industries within the corporate limits of the city. It says:

The preliminary statement given out by the census bureau, and which was published in the Chattanooga Times a few days ago, in which the number of manufacturing establishments in Chattanooga was placed at 330, does not do this city justice, when it is taken into consideration the fact that a great many of the factories, which to all intents and purposes are in the city, are just outside of the corporate line, and do not appear in the preliminary report of the census bureau to be Chattanooga enterprises.

As a matter of fact, some of Chattanooga's most important factories are in the suburbs. The matter was investigated carefully yesterday by a Chattanooga Times reporter, and it was ascertained that seventy-one factories are now located in the various suburbs around Chattanooga. They are distributed as follows:

Hill City, nine; Highland Park, eight; Ridgedale, five; Sherman Heights, eight; East Lake and East End, eleven; Orchard Knob, one; St. Elmo, Mountain Junction and Alton Park, nineteen.

The following does not include such enterprises as the cement factory, the Park Woollen Mills, the Richmond Hosiery Mill and several other concerns at Rossville.

While these are across the line into Georgia, they are owned and operated by Chattanooga parties. The product of these mills is shipped from here, and they employ hundreds of operatives who spend their earnings with the mechanics of this city.

It is a very safe and conservative estimate to say that there now are at least 425 factories in and around Chattanooga, for it must be remembered that this city has made rapid strides along the line of acquiring new factories during the past twelve months.

When called upon to explain, the local supervisor of the census stated that only the manufacturing establishments in the corporation proper are given in the census report sent out for Chattanooga, and that the suburban factories are as much a part of the manufacturing interests of Chattanooga as is the population of those districts.

That is a very plain, matter-of-fact, common-sense statement, and is a complete denial of any charge of defective figures, as far as any facts sustaining that charge are deduced by the Chattanooga Times, for the figures expressly deal with the establishments in Chattanooga, and not with those "in and around" it. Only the other day that sheet, going off half-cock in criticism of statistics of another kind, expressed a willingness to wait for the official returns. Now that the census has given figures in its own field, the Chattanooga Times calls them defective, and reveals in its criticism the absurdity of its pretensions as a statistical authority. It seems to forget that the figures for Rossville, which is in Georgia, must necessarily be credited to the State of Georgia, just as the figures for suburbs of Chattanooga must be credited to the State of Tennessee outside of Chattanooga, and that the

census was taken in 1900, and not in 1902.

If the Chattanooga Times wishes Chattanooga to be credited with large industrial achievements, it should devote its time to encouraging the growth of those already established there and to the creation of new ones, instead of taking flings at other Tennessee cities or of talking like an idiot about defects which do not exist. It ought to quit fooling with figures. They are dangerous.

The Times of Raleigh, N. C., alluding to an increase in capital of the Clayton Cotton Mill by borrowing \$40,000 secured by a mortgage, states that the lenders required that the trustee should be some man outside of North Carolina. This demand was due to the endeavor in the last legislature of the State to pass a bill requiring a trustee to make public a list of all persons holding securities resting upon a mortgage, and the Times adds that this act was so strongly championed that capitalists in making loans require that the distributing point shall be outside of the State. It sees no advantage in this to North Carolina. Other observers note in it a hint of the conservative attitude of capital toward communities or States in which the interests of capital may be threatened with undue interference on the part of the State.

#### Will Welcome Industries.

Mr. T. G. Stuart, chairman of the executive committee of the Commercial Club of Winchester, Ky., writes the Manufacturers' Record that the city council of Winchester has unanimously passed an ordinance exempting all new manufacturing enterprises started there from taxation for five years. Mr. Stuart adds: "Will you kindly say in your most excellent journal, which is doing and has done so much for the upbuilding and development of the South, that we will welcome all legitimate enterprises to our growing city, and that, in addition to an exemption from taxation, our citizens and the Commercial Club will give substantial aid and encouragement to them."

#### The Charleston Exposition.

Mr. Algar M. Wheeler, assistant director-general of the South Carolina Interstate and West Indian Exposition, writes to the Manufacturers' Record as follows:

"The great plan and scope of our exposition is realized by very few. Its buildings are larger than those of Omaha, Atlanta or Nashville, and the floor space in many of them equals the Pan-American. In several buildings there is yet some available space, and a few lines of manufacturers are not represented at all.

"The exposition will not be fully completed or at its best before the middle or latter part of January, and the largest attendance will be in February, March, April and May, when the Florida travel will increase it. Everything points to a financial success. The attendance from 300 miles of adjacent territory will be unprecedented, as the railroad companies have undertaken to put every man, woman and child that is able to travel upon the exposition grounds at a phenomenally low rate. Board and expenses for a week will be correspondingly low.

"Many exhibitors will doubtless reap better results here than from other expositions, where visitors went for 'flying trips' and saw the exposition but once or twice. Here they will make a week of it."

During December the value of exports from Newport News, Va., was \$3,942,363, with flour leading at \$1,401,036.

#### AROUND MINERAL CITY.

##### Developments Connected with the Sulphur-Mining Industry.

[Special Cor. Manufacturers' Record.]

Mineral, Va., January 7.

The first year of the new century was one of uninterrupted prosperity and development for the country contiguous to this place. Every class of industry has gone forward with vigorous strides, and farmers, miners, mechanics, laborers and merchants are in a cheerful and contented frame of mind, and looking forward with hope and faith in the future.

The most important new industry begun during the last year was a flouring mill with a capacity of forty-five barrels per day, erected at this place by the Quisenberry brothers. This mill is thoroughly equipped with the latest and most improved machinery, and will prove a great convenience to large portions of Louisa, Spotsylvania and Orange counties, as it will give a local market for wheat, and also give the farmers an opportunity to have their wheat ground into flour of the best quality.

The sulphur-mining industry was never in a more flourishing condition. All the mines have been in active operation, and the output has been limited only by the difficulty experienced in obtaining labor. Early in the year 1901 there was a strike at one of the mines, but only a small number of the men took part in the movement, and no interruption to work resulted. The trouble in obtaining labor has been due largely to the fact that men could not rent houses or obtain board. To remedy this difficulty the Sulphur Mining & Railroad Co., which owns and operates the property known as "Sulphur Mines," and also the "Tinder Flat" property, has during the past year erected a large number of comfortable and attractive cottages for the use of its employees, and also a large and commodious boarding-house, which opened with the new year. This company also has in course of erection a large two-story building, to be used as a commissary. This building was necessary to accommodate the large stock of goods carried by the company, and will be used in connection with the present commissary and warehouse buildings, the three being required to give the needed room.

The local demand for lumber has been very strong and active. The various mines require a continuous supply, and the outside demand has proved greater than the supply. Never before was the demand for labor as great or wages so good. This is one of the most favorable signs of the times, notwithstanding the complaints which it brings from the farmers.

Another indication of advancing prosperity not less certain and inspiring is the enhanced value of farming lands in this section of Virginia. This is due to two causes. The first is the marked improvement in the condition of farms in many neighborhoods. The second is a more active demand than ever before. The mere fact that their property is in demand puts new heart and hope into our farmers and stimulates them to new effort. In some neighborhoods it is now difficult to find a farm for sale, and more than one instance might be cited where farms have been sold and then bought back at a considerable advance by the original owners, who never left their property. Others could be cited of farms purchased only two or three years ago, which cannot be bought today at an advance of 100 per cent. And this is in neighborhoods remote from any town and at a considerable distance from a railroad. This shows that the advance in lands is general, and not de-

pendent upon proximity to a city nor confined to sections where fancy farming is practised.

#### Big Coal and Coke Operations.

Referring to the recent deals in the Pocahontas coal region, Mr. E. H. Gary of the United States Steel Corporation says:

"The properties heretofore secured by the managers of the Pocahontas coal syndicate, consisting of about 300,000 acres of the very best fuel and coking coal which has ever been discovered, and located on the lines of the Norfolk & Western Railway Co., have been sold and conveyed to the Pocahontas Coal & Coke Co., whose capital stock is owned or controlled by the said railway company, and 50,000 acres of these lands have been leased on a royalty basis to companies whose capital stock is owned or controlled by the United States Steel Corporation. There will, within the comparatively near future, be constructed at least 3000 of the most modern coke ovens with a capacity of at least 1,500,000 tons of coke, together with necessary railroads, tipplers, water-works, electric plants, power plants, residences, stores and other improvements, and work will be commenced at once."

This announcement insures a very great increase in the coal and coke development of the Pocahontas region, and means an expenditure running into the millions. It is only another illustration of the southward trend of industrial interests.

The proposed consolidation of the coal interests of the New River district will probably be effected shortly, and while these negotiations are pending there are also a number of deals under way for the purchase of large tracts of coal lands in West Virginia, and now to these movements must be added the sale of the West Virginia Central and all its coal properties. Putting the sale of the Pocahontas properties at \$20,000,000, as reported, although higher figures have been named, and the West Virginia Central at \$17,000,000, and adding to this the New River and other deals practically assured, would give a total of probably \$60,000,000 as representing these investments in West Virginia coal and railroad properties.

#### West Virginia's Glass Industry.

[Special Cor. Manufacturers' Record.]

Wheeling, W. Va., January 7.

The marvelous growth of the glass industry in West Virginia within the past year seems destined to continue at such a rapid pace that 1902 will see the State's product doubled. It was trebled in 1901. State Labor Commissioner I. V. Barton of Wheeling has returned from a lengthy inspection tour in Central and Southern West Virginia, and, in speaking of industrial conditions, said to the Manufacturers' Record correspondent:

"There is an exodus of glass manufacturers and workers from the Indiana gas belt to the cheap fuel fields of West Virginia. I never, in many years' experience, noticed such a boom in any one line of manufacture. As an evidence of the unparalleled activity of the glass trade in West Virginia, I will mention the fact that in one line, window glass, we now have seven factories, whereas twelve months ago we had not one. Cameron has a plant, Morgantown one, Clarksburg two, and one each at Sistersville, Mingo and Huntington. I have information that others are contemplated."

"In the other departments of glass manufacture great strides have been made. Many Indiana men are arranging to establish plants here. They are driven out of the Western gas belt by lack of gas.

Coal  
muc  
have  
glas  
wan  
trem  
Th  
is pu  
side  
ity  
plan  
after  
T  
rap  
bur  
in  
G  
Ed  
con  
Cl  
the  
dis  
say  
C  
be  
wi  
in  
Ch  
be  
gas  
C  
riv  
and  
Ch  
of  
one  
G  
tw  
a g  
La  
mi  
ve  
St  
M  
fr  
te  
fi  
Cl  
th  
le  
Sa  
to  
ci  
w  
fr  
tw  
la  
pu  
of  
di  
ea  
C  
a  
le  
y  
n  
h  
a  
s  
r  
g  
t  
D  
I  
D  
I  
XUM

Coal in the furnaces is expensive, and oil much more so. Thousands of inquiries have been received by West Virginia glass companies from Indiana workmen wanting positions here. It indicates the trend of matters."

The Riverside Glass Co. at Wellsburg is preparing to put in the tank system, besides increasing its six-pot furnace capacity to sixteen pots in the spring. This plant resumed operations last Monday, after a brief shut-down for repairs.

The Central Company at Wheeling is rapidly rebuilding its factory, which was burned recently, and in a month will be in operation. Fireproof buildings are being put up so far as possible.

#### Gas in the Great Kanawha Valley.

*Editor Manufacturers' Record:*

Being the owner for many years of a considerable body of land on Elk river, in Clay county, I have given my attention to the development of coal and oil and gas in the Great Kanawha valley, and as the discovery of gas is of recent date, I will say this on that subject:

Gas in the Great Kanawha valley has been abundantly proven by wells drilled within the last twelve months at Racine, in Boone county, fourteen miles from Charleston. Five producing wells have been drilled. Charleston is supplied with gas from these wells.

On the waters of Big Sandy of Elk river, not far from the line of Kanawha and Clay counties, and twenty miles from Charleston as the crow flies, four wells of the five drilled are large gas producers, one of them giving, as estimated, 4,000,000 cubic feet daily.

On the north boundary of Clay county two wells have been drilled, one of them a good producer, and on the waters of Big Laurel creek, in Clay county, some five miles northwest from the courthouse, a very neat gas well has been in a few weeks past developed.

Looking at the map of the geological State survey and the gas well marked Mercer, and drawing a line northeast from Racine, it will cross the Kanawha ten miles above Charleston as the crow flies. Racine is fourteen miles from Charleston and about seven miles from the salt wells of the Kanawha. A parallel line drawn from the wells on the Big Sandy some twenty miles from Charleston crosses the Kanawha very near the city, and a parallel line drawn from the wells in Roane county, some thirty miles from Charleston, crosses the Kanawha twelve miles below. Distances are calculated as the crow flies. And thus is proven by recent developments a gas field of some twenty-five miles in a northwest direction and some forty miles in a northeast direction, or 1000 square miles, with Charleston about the center. Is there another city in America so favorably located for an abundance of gas for many years to come. I think not. I will remark the great coal fields of Elk river have been proven by these wells on Sandy and in Clay county.

J. S. S.

Charleston, W. Va.

#### West Virginia Oil.

*[Special Cor. Manufacturers' Record.]*

Wheeling, W. Va., January 4.

The remarkable growth of the oil belt northward is the object of surprise and speculation among the well-informed oil men of the State. Less than six months ago the people in Marshall county above the main line of the Baltimore & Ohio practically had no use for oil derricks. Now the Peerless Lumber Co. of Glen Easton has orders for materials for 250 new wells, all to be drilled in the vicinity. The recent strike of good producing wells in moderately deep territory has

stimulated the oil industry wonderfully, and there is every reason to believe that the coming few months will produce additional surprises. The line is slowly extending towards Pennsylvania, and the time is not far distant when there will be no boundary between the oil districts of the two States.

In the Wirt county field many new companies are preparing to open operations with the coming of better weather. The Barrister Oil Co. of Wheeling has determined to test its territory, which, while not large, is well located, being surrounded by light and deep sand wells in the Parish Fork field.

#### Huntsville Looking Forward.

*[Special Cor. Manufacturers' Record.]*

Huntsville, Ala., January 4.

The past year brought untold success to the manufacturers and every other line of business throughout North Alabama, Huntsville in particular. But the new year brings the tidings of a new era in the history of her great prosperity. Negotiations are pending for the location of several diversified industries, the class most needed to build up any manufacturing center. The Chamber of Commerce, Hon. R. E. Pettus, president, has accomplished the greatest work during the year that has just closed of any time since the beginning of its labor, nearly eight years ago. The business men of Huntsville have labored in season and out of season for the upbuilding of their town, and the outlook is now most encouraging. The question of most absorbing interest at this time is the securing of more railroads. It now looks that this end is near. There is a contemplated \$7,000,000 trunk-line system to pass through this city. The line is to be surveyed through the mountain and mineral lands of Kentucky, Tennessee and Alabama. Huntsville has been designated as the place for office and shops. The organization of the company, it is said, will take place this month, and during January a charter will be secured and active work will commence. New York capitalists are at the back of the scheme. The Southern Railway is making considerable improvements in its service, having only recently added the Newsboy train from Memphis to this city and return. This road is also preparing to begin the erection of a handsome depot shed at once. The North Carolina & St. Louis Railroad is also making a strong pull for the development of this section, and many fine improvements are being made in its line.

Huntsville is now one of the leading distributing points in this part of the South, and her manufacturing importance is rapidly becoming known. There are now nine cotton mills here, all of them in operation except one, and it will start up so soon as it can be completed. The spoke and handle business, carriage manufacturing, foundries, machine shops, fiber factories, shirt mills and other such industries are all important factors in the make-up of this city.

The business men of the city have two strong things in view for the coming year—a campaign for new industries and the location of Northern immigrants, and a systematic campaign throughout the State for education. Not only Huntsville is enjoying textile prosperity, but there are several other thriving towns along the line of Southern Railway, chiefly Decatur, Tuscumbia, Sheffield and Florence, all experiencing a wonderful growth, which is attributed to the untiring efforts of the business men of the respective places. At Sheffield the Southern shops are rapidly going up; an electric-light plant and water-works system are to be put in, together with the construction of

\$20,000 worth of new houses. Each town is a friendly rival of the other, every one being proud of its neighbors' success. This is a helping feature that is watched by all Alabama cities.

There is another great industry that is growing in this part of the State. There are six large nurseries in this (Madison) county, and another is being established. The fruit-growing industry and farming are two of the chief elements that keep Huntsville so prominently in the eyes of the world. The richness of soil, delightfulness of climate and other conditions make this possible.

Hon. R. E. Pettus, president of the Huntsville Chamber of Commerce, is in correspondence with parties who desire to locate a new furniture factory in this city for the manufacture of the cheaper grades of furniture.

Architect Herbert Cowell has prepared plans for the \$20,000 opera-house proposed for this city.

#### Opportunities at Gadsden.

*[Special Cor. Manufacturers' Record.]*

Gadsden, Ala., January 6.

Gadsden is situated at the southern extremity of Lookout mountain, and on the west bank of the Coosa river, ninety-two miles south of Chattanooga, Tenn., 190 miles west of Atlanta, and sixty-nine miles north of Birmingham, in the richest mineral section of Alabama. The city offers many advantages to manufacturers. There are ample railroad facilities. The Louisville & Nashville, the Nashville, Chattanooga & St. Louis, the Southern and the Chattanooga Southern enter Gadsden and handle its increasing business. There is also an electric car line running from Gadsden to Attalla, a distance of five miles, passing through Alabama City, a prosperous town of 3000 people. In the nearby country many peach orchards have been started, and many carloads of fine peaches have been shipped to Northern markets. Strawberry-raising is also successful. One farmer cleared one acre, set out plants, and one season afterward realized \$350.

Gadsden is furnished with water from the Coosa river by pumps, which force the water to an altitude of several hundred feet into a large reservoir situated on the mountain, from which the water is filtered with the latest and most complete filters.

The best molding sand can be found anywhere in inexhaustible quantities within the corporate limits of Gadsden. Fine building stone can also be obtained here.

There are several manufacturing concerns already here, and excellent opportunities are offered to others desiring to come here.

Gadsden has a live, wide-awake Commercial Club ready and willing to assist all bona-fide manufacturing enterprises that may desire a Southern field. The money interests of the city are not backward in taking stock in enterprises, and all the industries in Gadsden are backed by local capital.

The secretary of the Commercial Club, Mr. A. T. Stocks, will give any information that is desired, and everyone will be accorded a hearty welcome to one of the coming manufacturing towns of the South.

I. S. FIELD.

#### To Help Manufacturers.

Mr. J. M. Abbott of Seguin, Texas, writes to the Manufacturers' Record that local co-operation will be given to anybody establishing there a knitting factory and a bed-comfort factory. He adds that Seguin, which is thirty miles east of San Antonio, handled last year 37,000 bales of cotton, and that home people promoted

the establishment of the Seguin Compress Co., with F. C. Weinert, president, and the Seguin Milling & Irrigation Co., with James T. Holmes, president. All of the stock of the first company was subscribed at Seguin, and land for a site has been purchased and arrangements have been made for the purchase of a new press. The second company, which has a capital stock of \$50,000, owns a 10-foot waterfall on the Guadalupe river four miles west of Seguin, and its plant is connected by a mile of side-tracking with the main line of the Southern Pacific. The company will operate an ice plant of seventy-five tons capacity. On January 10 a Chicago gentleman is expected in Seguin regarding plans for a brewery.

#### A Tribute to the Trackwalker.

*[Staunton (Va.) News.]*

The way the mountain divisions of our Southern railroads have withstood the onslaughts and underminings of the recent floods furnishes a gratifying object-lesson for the instruction of those who are unappreciative of the benefits our people are deriving from the vast sums of money which, during the last few years, have been invested in the practical reconstruction of our leading lines, such as the Chesapeake & Ohio and the Southern.

Ten years or so ago a rain like the one that has just flooded the country all the way from Virginia to Alabama would have wrought such wreck and ruin that travel and traffic would have been indefinitely suspended, to the public's unspeakable loss and inconvenience. But so effective are the safeguards provided by rebuilt bridges, raised roadbeds, widened cuts, enlarged culverts, as well as by modern mechanical appliances, that instead of weeks of stoppage, few trains have been delayed longer than the time necessarily lost in prudent slowing up.

To one familiar with the "tricks and manners" of the mountain stream which an inch of rainfall may change from a trickling rill to a raging river, the wonder is that despite all these improvements and betterments, the recent two to four-inch midwinter downpour has done so little damage. With the exception of the rock-slides near Lynchburg, which no human foresight could have anticipated or prevented, not a train has been wrecked nor a life lost along the hundreds of miles of railway threading the valleys and canons of the South Appalachian ranges.

But much as we owe to the capitalist and wide-awake managers who have physically revolutionized our railroads, we owe at least the meed of praise to the skill and fidelity of the men who have in their keeping the life of every traveler. Some of these have got scant recognition and scanty thanks. It has grown to be a custom of the Presidents of the United States to take off their hats to the faithful enginemen who have landed them in safety at their journey's end. But few even among them who spend half a lifetime on the rail give so much as a thankful thought to that unseen army whose ceaseless track tramp means more in the way of safety-insurance than the skill and vigilance of either the man on the engine or the man at the "block." Whatever may be the merit or mettle of trackwalkers on other lines, I happen to know that those on our own C. & O. are of the "true-blue" kind, all picked and tried men. By reason of keen-sighted vigilance and conscientious sense of responsibility, they deserve to be greeted with hats off by the great traveling public, from the President of the United States to the humblest citizen. So here's a Happy New Year to those faithful "watchmen of the night," the trackwalkers of Virginia's railroads!

THOMAS P. GRASSTY.

**NOW IS THE TIME TO ACT.****Strong Demand for Technical Training of White Boys.**

The Arkansas Democrat of Little Rock publishes a strong plea for provision for the technical training of white boys of the State. It says:

"The Board of Trade has received a pamphlet copy of the celebrated speech made by Mr. Richard H. Edmonds, editor of the Manufacturers' Record, before the annual convention of the Southern Cotton Spinners' Association at Atlanta on the 14th of November last. One cannot but wish that a copy of it could be read by every man in Arkansas. The subject is 'The South's Industrial Task: A Plea for Technical Training of Poor White Boys.'

"And in the whole State of Arkansas there is not for white boys a manual training school. There are several for the colored.

"Is it proposed that the white boys shall be handicapped in the struggle for existence?

"Is it not the duty of every man whose interests are in Arkansas to personally use his efforts to see to it that a school of this character is established in Arkansas by the next general assembly? They exist in the neighboring States.

"In a leaflet inclosed in the pamphlet Mr. Edmonds says:

"Are the people of the South in earnest in desiring to aid the technical training of poor white boys? Are they willing to do even in part for the poor white boy what Northern philanthropists are doing for the industrial training of the negro? If so, will they aid the South's technical schools in their work by contributing to the support and education of poor white boys in the way suggested in the accompanying pamphlet? Briefly, this plan is that 1000 or more Southern business concerns or individuals shall each contribute \$125 or more a year for four years to give a technical education to 1000 poor boys, the boys binding themselves to repay the money after graduation, so that the same fund could be used for aiding others. Thus every contributor, in effect, founds a perpetual scholarship. The contributions should be made to one or more institutions located in the State in which the donor lives.

"This plan received the hearty endorsement of the Southern Cotton Spinners' Association. Won't you study it, and if you or any institution with which you are connected are willing to join the list of men or institutions ready to prove by their works their desire for the broadest help to the poor white boys of the South, as well as to do the greatest good for the advancement of the South, by agreeing to subscribe \$125 or more a year for four years to aid in this work, will you notify the president of one of the technical schools in your State, to whom the money should be paid, and at the same time advise the Manufacturers' Record of Baltimore, in order that a full list of contributors may be published as a roll of honor of Southern men and Southern institutions."

"In the foregoing Mr. Edmonds urges that the contributions be made to institutions in the State in which the donor lives. He does not comprehend in this particular how far we are behind the times, and to what extent our legislators are neglecting one of their highest duties. Before another year rolls around arrangements must be made that will secure the much-needed school for our boys.

"We cannot hope to take advantage of our great natural wealth, the raw materials, unless we can fit the boys to handle them. Our cotton, minerals and timber, the wealth given us by nature, is going

from us for nominal sums, and going to the North and East because we have not the factories, and factories we can never have without skilled labor. In the words of Mr. Edmonds, 'our very salvation, industrial and social, lies in adequate provision for rendering available our human material, so full of potentialities for good of every kind.'

**PRACTICAL EDUCATION NEEDED.****Self-Help a Necessity for Thorough Development.***Editor Manufacturers' Record:*

If I had imagined for a moment that my letter to you might have had some general interest, I should have thrown it into a literary form. At the same time, I am to be congratulated that the views I have expressed are in harmony with men like yourself, who have studied this important problem on the ground and are informed of the facts from the facts, and not from mere letter-press.

If in the country schools all through the South such works as "New Plants Grown," "New Plants Fed," "Animal Industries," could be substituted for the skimming, shallow literary works and hard analyses of the present regime, a scientific interest in things would be stimulated. Then, if through the influence of the friends of this movement some people of wealth would give a plantation or a part of one in many a district to be turned into a working school, the pupils learning "the how" with their hands and the dexterity by practice, and "the whys" by word of mouth, as the apprentices of old did in the arts, we should form a body of capable, thinking agriculturists who can do, and not merely lecture how to do with their hands in their pockets. I feel sure that this would be possible in many directions. You have the wealth in the soil; surely the capacity can be created to produce it. The question with these boys is to find their work, and not drive away their lives, leaving their country as poor as they found it. A large immigration is going to set in from the North and West. For individual effort, we are filled up here. Are they, the Southern boys and rightful possessors of the soil, to be swept aside in the struggle of the survival of the fittest? Let us all put our shoulders to the wheel and decide to do the right thing. If these boys have the grit and stubbornness of the Anglo-Saxons, they will be ready to do their share. Any attempt to pauperize, to carry on any system of training at the expense of independence and self-respect, is not only undermining to the character of the individual, but it is an entirely wrong basis where sustained effort is the one point to be in training for and towards. Every boy receiving a scholarship ought to begin the active manual effort to help himself as a condition. Then we make a man, besides making a possible expert. It is easily demonstrated how so many hours of real work a week, whether on the farm, the creamery, the electric work or the mill or mine, give a grasp of what men are doing and may be rightfully required to do, which no amount of book work could bring within their reach, and the moral gratification of earning, of striving, of making the effort, of gaining courage and self-reliance, and the delight of it all, is half the victory.

Just twenty years ago I returned from an expedition in the Arctic. I know what effort means and the sensation of surmounting difficulties, and hunger, too.

Regarding agricultural education, I have only to point to France now and France under the stupid, benumbing influence of the Church, with its propaganda, that this is a "vale of tears," and

we're only here for a short probationary time. I said to a French peasant: "I would like a bit of something to eat." "Oh," said the daughter, "we've nothing to offer the gentleman. There's no meat in the house, but there are some eggs, and I can kill a chicken, and there's some fresh salad and butter and bread cakes, white and brown, and (added the father) a jar of wine."

This on four acres of land—toil, thrift and plenty.

OCTAVIUS I. BATES, F.R.G.S., F.R.H.S., Oakland, Cal.

**Industrial Training in Texas.**

Mr. V. W. Grubbs of Greenville, Texas, chairman of the State committee on industrial education, writes:

"I have read with much interest your speech delivered in Houston, Texas, on the 12th of November last, in which you give a most favorable, though not an extravagant, estimate of the resources and possibilities of our State. I note with satisfaction your reference to the educational advantages of Texas, based upon its princely permanent school fund, and your timely suggestion that our people should lead in the establishment of an efficient system of technical and industrial training. I beg to inform you in that regard that in the early part of the year 1890 an organization was formed in Austin having for its purpose the awakening of public sentiment to the immediate and pressing necessity of the education of our youth along industrial lines, looking to their preparation and qualification for the duties and responsibilities incident to the great industrial movement which had recently been inaugurated for the development of the resources of the State. The people have everywhere responded to the effort, and there is now no doubt that the next legislature will take hold of the matter and make liberal provisions for such training as a part of our public free-school system.

"The State Teachers' Association, recently in session at Waco, endorsed the movement and appointed a strong committee to act in conjunction with our committee and other organizations in the formulation of a plan and urging the same before the legislature. The Texas press has contributed inestimably to the success of the committee."

**Shipbuilding for New Orleans.**

A shipbuilding plant capitalized at \$150,000 will be established at New Orleans, the enterprise having been announced during the past week. It will be equipped by a company now organizing and only waiting the completion of legal formalities to commence the work of construction. R. C. Wilson is the prime mover in the company, and will be its engineer. Mr. Wilson has designed a boat especially for operating in the shallow waters through Lake Borgne canal, Lake Borgne and the Mississippi sound, up Mobile bay and the rivers flowing into it from the Alabama coal fields, and this boat will be a specialty of the new yards. Capt. Alex. M. Halliday, who is to be the company's president, W. G. Wilmot and Walter Verlanders are interested.

**Two More Elevators.**

Advices from New Orleans are that the Illinois Central Railroad Co. will probably construct two additional elevators at its terminals on the Mississippi river. One will be near the Stuyvesant docks. The plans include what is known as a drying elevator of 150,000 bushels capacity, while the other, if built, will be a storage elevator, which will considerably increase the "house" facilities of the Illinois Central at this point.

**RAILROADS.**

[A complete record of all new railroad building in the South will be found in the Construction Department.]

**NEW SOUTHWESTERN LINES.****Continued Activity in Railroad Construction in Texas and the Territories.**

The Manufacturers' Record has received official advices of three very important systems which are to be built as soon as possible. The Ozark & Cherokee Central Railroad, extending from Fayetteville, Ark., to Lincoln, I. T., a distance of twenty-one miles, is to be expanded into a system 200 miles in length, reaching from Fayetteville to Shawnee, Okla., connecting with the St. Louis & San Francisco system at its southern terminus. The project is being carried out by two companies. The Shawnee, Oklahoma & Missouri Coal & Railway Co. will build from Muskogee to Shawnee, while the Ozark & Cherokee Central Company will complete the mileage from Muskogee to Lincoln. All of the contracts for the work have been let, the Kenefick Construction Co. of Kansas City being the general contractor. Tracklaying is now in progress between Lincoln and Muskogee. Both lines are practically owned by the same syndicate, which includes a number of Iowa capitalists, H. W. Seaman of Clinton, Iowa, being president. Mr. Seaman officially confirms the above statement.

The Orange & Northwestern Railroad Co., which was recently completed between Orange and Buna, Texas, a distance of thirty miles, is to form the nucleus of a network of roads in the eastern part of the State, terminating at the cities of Marshall and Corsicana. Mr. John W. Maxey, assistant to the president of the promoting company, informs the Manufacturers' Record that surveys are to be made immediately from Buna to Marshall and from Buna to Corsicana with a view to letting contracts as soon as possible. When the plans are completed the system will be 355 miles in length.

G. A. Human & Co. of Cleburne, Texas, are promoting another line in the northern section of the State between Cleburne and Fort Worth. Mr. Human writes that the line will be twenty-eight miles in length, and that a proposition has been made to the people of Cleburne, which is now under consideration. Right of way has already been secured.

Altogether, these three projects will add 532 miles to the railroads in Texas and the Territories when completed.

**New Line to the Gulf.**

A system which, if completed, will connect Memphis with the Gulf coast at Mobile, Ala., has been planned to be built through portions of Alabama, Mississippi and Tennessee. The promoting company, which is entitled the Memphis & Mobile Railroad Co., has already begun the work of surveying the northern portion between Hattiesburg and Memphis. The route selected is by way of Grenada, and it is stated that construction is to begin at once between Hattiesburg and Grenada, a contract having been given to Geo. Arnold & Co. of Memphis, Tenn. The Mobile, Jackson & Kansas City road will be completed between Mobile and Hattiesburg in a few weeks, and it is understood may form the southern portion of the new system, which will be about 300 miles in length.

The promoters of the line have organized by electing Mr. Chester H. Pond of Moorhead, Miss., president. Others interested are Messrs. Adam M. Byrd of

Philadelphia and E. Mr. T. banking Mr. I with structure now f Philad Mississ be lar wood Presid the n Gren next tation v Central a adding should & Me Kans cials o amina sas Ci the lat mer co An traffic cent st well, as souther ring to Max "We year, to have which have l greater is due have p the nu we wo us ta we kep thirty- We co We ha next y if busi tive w be ove be deli them t gines a be undi secure condit stood t road p at a c year, o of cott ducing thought The Co. has tant in They i been un Lampa miles; main i erection emal poi The co estimat of the n for new \$25,000 compa twelve and ten The cently n

Philadelphia, Wm. T. Allen of New York and Edward H. Thomsen of Baltimore. Mr. Thomsen is senior member of the banking firm of E. H. Thomsen & Sons. Mr. Pond is well known in connection with railroad promotion, having constructed the Yazoo Delta Railroad, which now forms a portion of the Illinois Central system. He is also prominently identified with the industrial development of Mississippi. Mr. Byrd is understood to be largely interested in pine and hardwood lands along the line of the railroad. President Pond is quoted as saying that the mileage between Hattiesburg and Grenada is to be completed within the next twelve months. At Grenada a junction would be formed with the Illinois Central system, thus affording the Central a very desirable route to Mobile and adding this port to its seaboard terminals should it become interested in the Mobile & Memphis and the Mobile, Jackson & Kansas City. Several months ago officials of the Illinois Central made an examination of the Mobile, Jackson & Kansas City, and at that time it was reported the latter would be absorbed by the former company.

#### Demand for Rolling Stock.

An idea of the extent of the freight traffic in the Southwest is given in a recent statement made by Mr. J. W. Maxwell, general superintendent of the Missouri, Kansas & Texas system. Referring to the purchase of rolling stock, Mr. Maxwell said:

"We bought 1000 new coal cars this year, but as we have to furnish the cars to haul coal to several other railroads which are using more coal than usual, we have been crowded for equipment. The greatest difficulty is in providing power. It is due to the large increase in traffic. We have placed orders every year for about the number of engines which we thought we would need. This year it seemed to us that twenty-two would be ample, but we kept on placing additional orders until thirty-seven have been delivered to us. We could use more, but can't get them. We have ordered thirty-three engines for next year, which we think we will need if business keeps up. One of the locomotive works advises us that they already have orders booked for 1600 engines to be delivered next year. This will keep them turning out an average of five engines a day during the year. So it will be understood that it is no easy thing to secure locomotives to meet unexpected conditions, and it will be further understood that it is no small thing when one road purchases thirty-seven locomotives at a cost of \$500,000. The traffic this year, on account of the smaller proportion of cotton and cottonseed products, is producing less revenue than last year, although the tonnage is larger."

#### Millions for Improvements.

The Houston & Texas Central Railroad Co. has planned a number of very important improvements for the present year. They include the extension, which has been under consideration, from Burnet to Lampasas, a distance of twenty-four miles; the relaying of 100 miles of the main line with 80-pound rails, and the erection of new depots and bridges at several points on the main line and branches. The cost of the Lampasas extension is estimated at \$400,000, and the relaying of the main line at \$500,000. The outlay for new buildings will be \$90,000, bridges \$25,000 and water stations \$12,500. The company has also decided to purchase twelve locomotives at a cost of \$102,000, and ten chair cars to cost \$71,000.

The appropriation of \$3,797,000 recently made by the Southern Pacific Rail-

way Co. for improvements includes the expenditure of \$518,000 for rails, with the necessary ties. It will expend \$288,000 in new depots and other buildings, \$19,000 for fencing, and has appropriated \$715,000 for locomotives and \$1,197,000 for cars.

#### Another Alabama Project.

A company has been organized to take up the plan of building a railroad between Montgomery and Tallapoosa, Ala., a distance of 135 miles. It includes a number of New York capitalists, and has elected George O. Vanderbilt of Princeton, N. J., president; Hon. William H. Martin of Frenchtown, N. J., vice-president, and Albert E. Vanderbilt, treasurer. Hon. W. W. Sumnerlin, mayor of Tallapoosa, is general manager. Mr. Martin is president of the Union National Bank of Frenchtown. The directors of the railroad company include A. B. Haring, cashier of the same institution. The route of the proposed road is through a country which is said to be heavily timbered, and the promoters of the railroad, it is understood, have secured control of about 300,000 acres of pine lands in the vicinity of the right of way.

#### Suffolk & Carolina.

The announcement is made that the Suffolk & Carolina Railroad is to be changed from narrow to standard gauge. This line, which was built several years ago from Suffolk, Va., to reach timber tracts in Tidewater Virginia and North Carolina, is now being extended to Edenton, a distance of fifty miles from Suffolk, where connection will be made with steamers on Albemarle and Pamlico sounds. With the improvements contemplated, the Suffolk & Carolina Railroad will interchange its traffic with the several railroad systems reaching Suffolk. Its increase in freight business has caused the plan to be decided upon. The road is practically owned in Baltimore, the president of the company being Mr. William H. Bosley, who is also president of the Queen Anne's Railroad.

#### To Build in Mexico.

Dispatches received in Kansas City are to the effect that the Kansas City, Mexico & Orient Railroad Co. has secured the capital in England to complete the Mexican portion of the system, and that already contracts have been made for rails for 600 miles of the line. Mr. A. E. Stilwell, president of the company, has been in London for some time in the interest of the road, and it is understood that subscriptions to the capital stock of the company aggregating \$2,500,000 have been secured from English capitalists.

#### To the Tennessee Copper District.

The Dalton & Alaculsy Railroad Co. has determined to reach the copper mines in Eastern Tennessee, and the Manufacturers' Record is informed that an extension will be built to Ducktown, for which surveys are now being made. The extension will be forty-four miles in length. The road is under construction between Dalton and Alaculsy, Ga., and is being built by a Northern syndicate of which M. S. Squires of Binghamton, N. Y., is president.

#### Railroad Notes.

It is reported that a syndicate of Memphis parties, including F. G. Jones and John Armistead, are considering the purchase of the street-railway system of Nashville, and have recently been examining the property to estimate its value.

A company has been chartered in Tennessee to build what is to be known as the South & Western Railway, with

\$100,000 capital stock. The route is from a point on the Tennessee and North Carolina line through a portion of Unicoi county to the line between Virginia and Tennessee. S. J. Kirkpatrick and Tate L. Earnest of Johnson City are among those interested.

The plans of the International & Great Northern Railroad, as thus far announced for the present year, include the purchase of a number of additional tank cars to carry oil, at an expense of \$65,000, and the expenditure of \$588,000 for various improvements, including a new passenger station at San Antonio and a freight depot at Palestine. The company also announces that it will change thirty additional locomotives to burn oil for fuel.

Baltimore capital will be extensively invested in the railway system being constructed in London by the syndicate of which Mr. Charles T. Yerkes is at the head. The Maryland Trust Co. of Baltimore, which is taking an active interest in the project, also Messrs. Alexander Brown & Sons and Col. J. Willcox Brown, president of the Maryland Trust Co., have subscribed to amounts of stock ranging from \$100,000 to \$400,000 par value.

#### Galveston and London.

A Galveston dispatch is to the effect that the Cuba Steamship Co., which has its principal offices in London, has determined to operate a monthly service between London and Galveston, and will probably call at Havana en route. The first vessel will sail from Galveston in February, Messrs. J. Moller & Co. being the Galveston representatives. The exports by this line will include cottonseed meal, flour and lumber, and it is stated the company has made a large contract with Western flour mills for products which will be shipped during the present year.

Waco, Texas, is one of the most widely known communities in the United States, on account of its remarkable growth and general prosperity. An excellent idea of Waco's present and future is given in a little book which has been issued, entitled "Waco, the Central City of the Lone Star State." The pamphlet is illustrated by half-tone and other engravings, showing public buildings, business and manufacturing enterprises, as well as sections of streets, and contains statistics giving extent of population, improvements and various industries. The portion of the Southwest of which this city is the market is also described. Among the industries which have contributed to the reputation of the community is the Slayden-Kirksey Woolen Mills. To the enterprise of this company is due the publication of the booklet referred to.

A dispatch from New Orleans states that at the official test of the new government dry-dock there, which was built at the Maryland Steel Co.'s works at Sparrow's Point, the battleship Illinois was raised in one hour and fifty-six minutes, which is regarded as a remarkably fast record.

H. & W. Patarky of Berlin write to the Manufacturers' Record that as there is still in Russia an indirect bounty upon Russian produced sugar, there is in that empire a large opening for centrifugal machines.

The sales in the Joplin (Mo.) district during the past week were 8,268,930 pounds of zinc ore and 1,433,140 pounds of lead ore, valued in all at \$147,885.

City Engineer Clayton of Atlanta reports that during the past year \$3,649,656 were spent in permanent improvements in that city.

## TEXTILES.

[A complete record of new textile enterprises in the South will be found in the Construction Department.]

Correspondence relating to textile matters, especially to the cotton-mill interests of the South, and items of news about new mills or enlargements, special contracts for goods, market conditions, etc., are invited by the Manufacturers' Record. We shall be glad to have such matter at all times, and also to have any general discussion relating to cotton matters.

#### New England Cotton Manufacturers.

The transactions of the New England Cotton Manufacturers' Association, at its semi-annual meeting at Niagara Falls last September, have been published in book form under the able editorship of its secretary, Mr. C. J. H. Woodbury. The publication includes, in addition to the running debates in the meeting, the speeches of Mayor Mighells B. Butler of Niagara Falls, welcoming the association; of President Chas. H. Fish of Dover, N. H., and of President John G. Milburn of the Pan-American Exposition, and papers of Dr. Robert H. Thurston of Cornell University, on the relations of manufacturing industries to national position and progress; of H. H. Fukuhara of Tokio, Japan, on the past, present and future of the cotton industry of Japan, which, by the way, is interestingly illustrated; of Phillip P. Barton of Niagara Falls, describing the plant of the Niagara Falls Power Co.; of Henry K. Kittridge of Boston, on the cotton fiber in some of its phases; of Wm. F. Southworth of Lowell, Mass., on the round bale at the mill; of Edward W. Thomas of West Durham, N. C., on the overworking of cotton in the cardroom; of Samuel Webber of Charlestown, N. H., on cotton waste; of Lewis T. Heughton of Worcester, Mass., on thread boards and guides; of Albert Diabell of Lowell, Mass., on the cotton industry in the United States; of Frank P. Bennett, Jr., of Boston, on the evolution of the slubbing frame; of H. F. J. Porter of New York, on steel forgings for factory engines; of D. A. Tompkins of Charlotte, N. C., on early Southern cotton mills; of Wm. Wittam, Jr., of Woonsocket, R. I., on the possibilities of trade expansion in cotton manufactures; of Col. E. D. Meier of New York, on modern boiler problems. The New England Cotton Manufacturers' Association has now four honorary members, 142 associate members and 515 active members. Of 661 total membership, seventy-eight are Southern men.

#### Shepperson's Cotton Facts.

Col. Alfred B. Shepperson of New York, the well-known cotton statistical expert, has issued his December (1901) edition of "Cotton Facts," which brings down to the close of the cotton season of 1900-1901 all the valuable statistics of his previous issues dealing with crops, receipts, exports, stocks, home and foreign consumption, visible supply, prices, acreage of cotton in the United States and other countries. Following a general review of the past season with a forecast for 1901-1902, Colonel Shepperson presents among his special features articles on the progress of cotton manufacturing in Europe, the United States and India since 1890, on the quantity of American cotton brought into sight and taken by the world's spinners each month since 1894, on the new irrigation works in Egypt, on cotton manufacturing in Japan, on the baling of American cotton, on the culture of Egyptian and Peruvian cottons with reference to their consumption in the United States, and on the Mexican cotton-boll weevil. "Cotton Facts" is a product of wide information and unpar-

ing pains to obtain correct facts about every subject treated within its covers, and is an absolute necessity to everybody who wishes to keep abreast of widespread developments in cotton growing and cotton handling.

#### A \$500,000 Plant Progressing.

Steady progress is being made on the construction of the plant of the Glenn-Lowery Manufacturing Co. at Whitmires, S. C. This enterprise is capitalized at \$500,000, and will have for its initial equipment 25,000 spindles and 800 looms for the manufacture of fine sheeting and print cloth. The main building is four stories high, 126x480 feet, and is planned for extending, so that the initial machinery can be doubled at a minimum cost. Power will be generated through a steam-driven electrical plant, and then distributed by means of direct-connected electrical motors. A hot-blast system will heat the plant; an automatic sprinkling system will also be in position. The entire plant and its accompanying mill village will be modern in every respect. William Coleman is president.

#### Great Falls Company's Betterments.

Great Falls Manufacturing Co. of Rockingham, N. C., mentioned last week, has contracted with the D. A. Tompkins Co. of Charlotte, N. C., for engineering its proposed improvements, that are to cost from \$35,000 to \$50,000. These improvements will include the installation of steam-power plant, fire-protection equipment, electric-lighting system, freight elevators, etc. Contract for this machinery has not yet been awarded. The plant is equipped for manufacturing coarse sheetings, and as soon as the company ascertains the exact capabilities of the machinery it expects to add 4500 spindles and make finer goods. The spindles now number 3500.

#### Spartanburg County Mill Dividends.

The cotton-manufacturing companies of Spartanburg county, South Carolina, have enjoyed a most prosperous business during the year 1901, as is evidenced by the facts announced in a dispatch from the town of Spartanburg. The dispatch presents a number of financial statements, from which is gleaned the fact that thirteen companies, operating more than 400,000 spindles and over 12,000 looms, have authorized the payment of dividends aggregating \$228,988. The aggregate capital of these companies is \$5,073,000, and their dividends ranged from 3 to 5 per cent., averaging more than 4 per cent.

#### A \$50,000 Woolen Mill.

The Ajax Textile Co. has been organized at Weatherford, Texas, for the purpose of establishing the woolen mill and camel's-hair press-cloth mill lately mentioned as to be erected in that town. Officers have been selected as follows: President, G. M. Bowie; vice-president, R. H. Fout; secretary-treasurer, C. D. Hartnett; general manager, A. F. Parker, and directors, Messrs. George P. Levy, L. M. Bailey, John R. McKenzie and W. T. Ivy. Work on buildings is to be commenced at once, and machinery will be in position by March 1. The capital stock is \$50,000.

#### The Cotton Movement.

In his report for January 3 Col. Henry G. Hester, secretary of the New Orleans Cotton Exchange, shows that the amount of cotton brought into sight during the 125 days of this season was 6,727,694 bales, an increase over the same period last year of 76,108; the exports were 3,643,014 bales, an increase of 368,576;

takings by Northern spinners 1,026,511 bales, a decrease of 102,753 bales; by Southern spinners 713,111 bales, an increase of 99,493 bales.

#### Textile Notes.

During 1901 the gross receipts of cotton at New York were 1,363,766 bales.

Norris Cotton Mills of Cateechee, S. C., has declared a 4 per cent. dividend on its \$200,000 capital.

Anderson (S. C.) Cotton Mills has declared a semi-annual dividend of 4 per cent. on its \$500,000 capital.

B. L. Battle Manufacturing Co.'s knitting plant at Warrenton, Ga., was destroyed by fire during the week, entailing the loss of about \$30,000.

Laurens (S. C.) Cotton Mills has declared a semi-annual dividend of 5 per cent. The company is capitalized at \$350,000, and has 40,320 ring spindles and 1188 looms in its plant.

Birmingham (Ala.) Cotton Manufacturing Co.'s plant of 5000 spindles was sold during the week under a decree of court. Delaware County National Bank of Chester, Pa., purchased the property at \$28,125.02.

Bluff City Cotton Mills at Memphis, Tenn., will be sold January 15 to parties who intend to reorganize the company and plant and put the mill in operation. There are 10,000 spindles and complement in position now.

Texas Hosiery Manufacturing Co. of San Antonio, Texas, is installing fifty machines, which will be in operation within thirty days. Messrs. M. G. B. Thomas and F. D. Kammann are interested in the enterprise.

Dublin (Ga.) Cotton Mills is now receiving the final shipments of the machinery for its plant. The spindles will number 5000 and the looms 160, for the production of fine sheetings. The company is capitalized at \$100,000.

Cedartown (Ga.) Knitting Co., reported incorporated last week, states that its organization does not mean the erection of any new mills, but is merely a combination of mills already built and equipped. J. Wright Adamson is secretary.

The committee that has been soliciting subscriptions to a cotton-mill company at Brenham, Texas, announces that \$90,000 has been signed for. Permanent organization will be effected soon. D. C. Giddings, Jr., is among those interested.

Willingham Cotton Mills of Macon, Ga., has increased capital from \$100,000 to \$150,000, the additional funds to be expended for the purchase of the 4000 additional spindles and 120 looms reported recently. A building is ready to receive this equipment, and it will be placed at once.

Chamber of Commerce of Chattanooga, Tenn., has received a proposition for the establishment of a \$300,000 cotton factory. A party formerly connected with a Chattanooga mill makes the proposition and offers to invest half of the required amount. An effort will be made to organize the company.

Lorn Mills of Gastonia, N. C., has started a portion of its machinery, and expects to have 25,000 spindles in operation by March. Five hundred operatives will be required to run the first instalment of spindles. The full complement will be 50,244 spindles and 1580 looms when all the machinery is in position.

The Wetmore Development Co., recently incorporated, has organized, with S. G. Finley, president and treasurer; S. M. Wetmore, vice-president, and G. R. Rembert, secretary. The company will establish at Spartanburg, S. C., a plant

for manufacturing the stop-motion for drawing-frames invented by Mr. Wetmore.

Southern Manufacturing & Mill Supply Co., capitalized at \$50,000, has been incorporated by Messrs. Harry E. Hansen of Gaffney, S. C., and Thorwald Hansen of Everett, Mass. This company has completed its factory, mentioned several weeks ago, and will manufacture roving cans, mill boxes, baskets, trucks, and other supplies for textile mills.

Reports from Rock Hill, S. C., credit the cotton mills there with making satisfactory profits during 1901. Manchester Cotton Mills, capital \$147,000, declares semi-annual dividend of 4 per cent.; Arcade Cotton Mills, capital \$98,700, also 4 per cent. semi-annual. Highland Park Manufacturing Co. does not name any figures, but states its profits were about equal to those of the previous year.

Woodstock Cotton Mills of Anniston, Ala., has completed its addition for packing-room purposes, same containing 500 square feet. A 400-horse-power boiler is being installed, increasing the plant's steam-power capacity to 800 horsepower. The company recently completed its improvements to double its 5260 spindles and complement, and now has the additional machinery operating with a daily production of 7000 pounds of yarn.

Moultrie (Ga.) Cotton Mills is proceeding with the construction of its additional building, and expects to complete it by February 1. Order has been placed with the Lowell (Mass.) Machine Shops for 120 looms, which will increase the total to 280, and by operating the carding and spinning departments day and night these looms will be supplied; the spindles number 5000. The production will be increased about 75 per cent. by these improvements.

High water and ensuing floods caused a damage of nearly \$100,000 last week to the dam and machinery of Anderson (S. C.) Water, Light & Power Co. The disaster was entirely unexpected, the dam having been pronounced by competent engineers as strong enough to withstand any possible overflows; dam was 700 feet long, 44 feet high, 30 feet wide at base and 8 feet wide at top; about 150 feet of this in the center was washed away. The power developed was transmitted electrically to a number of industries. One of these industries was the Anderson Cotton Mills, employing 1300 operatives, and this company, by the aid of a 300-horse-power steam plant, which it has, will be enabled to employ 600 of its hands. Many of the employees are already going to other sections to find employment until the damage at Anderson can be repaired. Orr Cotton Mills employed 500 operatives, and, unless the company decides to install boiler and engine temporarily, will have to remain idle until the dam is rebuilt.

The total pig-iron shipments from Alabama and Tennessee during 1901 were 1,554,932 tons, of which 22,149 tons were for export. The cast-iron shipments were 162,343 tons. There was an increase in pig-iron shipments over 1900 of 226,992 tons, and of cast-iron-pipe shipments, 73,393 tons.

The Meldrum Camphor & Chemical Co., which has recently been organized to manufacture chemicals at Blackshear, Ga., has also decided, it is said, to manufacture a starch from the cassava plant.

The census bureau has issued a bulletin showing that the value of manufactured products in Tennessee in the census year was \$107,527,060, an increase of 48 per cent. since 1890.

#### COTTONSEED OIL.

This department is open to the full and free discussion of trade topics and practical questions, and contributions are invited from men who are identified with this industry. Items of news are always acceptable.

##### Cottonseed-Oil Notes.

The Morgan Cottonseed Oil Mill, just erected at Morgan, Texas, commenced crushing seed on the 30th ult. The machinery worked admirably, and the outlook for business is quite encouraging. The mill is on the Texas Central Railroad, and has a capacity of forty tons a day.

The Transatlantic Trading Co. of Galveston, Texas, reports the shipments of cottonseed products from that port for December, 1901, as follows: Cottonseed meal 15,240 tons, and cottonseed cake 7855 tons. The same company reports the shipments from New Orleans for December, 1901, at 7445 tons of cottonseed meal and 19,875 tons of cake.

The following quotations were made on the 6th inst. at Galveston by exporters for cottonseed products: Cottonseed oil f. o. b. Galveston in barrels, prime refined, 38 cents, and prime crude, loose, f. o. b. Texas mills, 33½ to 34 cents, January; prime cottonseed cake, \$26 per short ton, and prime cottonseed meal, \$25.50 f. o. b. Galveston, January; linters, choice, compressed, 3½ cents; A, 3 cents, and B, 2½ cents, f. o. b. Galveston.

With the opening of the new year the cottonseed-oil mill at Jacksonville, Fla., has commenced operations. The plant is not yet in operation both night and day, but will be shortly. Everything about the works is in first-class order, and the mill has a daily capacity of eighty tons. The company owning the mill is composed of Tennessee capitalists, who also own another mill near Tallahassee. C. N. Henderson of Chattanooga is president of the company.

The plant of the McNally Manufacturing Oil Co. at Norfolk, Va., is now completed, and commenced operations last week. The first two months will be employed in crushing cottonseed at a rate of eighty tons per day, making about 2150 gallons of oil a day. After this run the plant will crush castor beans and flaxseed. The two companies, the McNally Manufacturing Oil Co. and the Cotton Oil & Fiber Co., expect to keep on hand and feed about 1000 head of cattle when the business is developed.

The movement in cottonseed products from the port of New Orleans last year shows a considerable gain over the business of 1900. In 1901 the exports of cottonseed cake and meal from that port amounted to 502,868,680 pounds, valued at \$5,442,969, against 453,221,175 pounds, valued at \$4,786,368 in the year 1900, a gain in favor of 1901 of 48,447,505 pounds. Shipments of cottonseed oil for 1901 amounted to 13,109,022 gallons, valued at \$4,203,086, against 11,407,750 gallons, valued at \$3,415,936 in 1900, an increase in favor of 1901 of 1,701,272 gallons.

The following are the official quotations on cottonseed and cottonseed products as posted at the Cotton Exchange in New Orleans on the 6th inst.: Prime refined oil in barrels, 39 cents per gallon; off refined oil in barrels, 38 cents per gallon; prime crude oil, loose, 34 cents per gallon; off do., nominal per gallon; prime cottonseed cake, \$28.75 per ton of 2240 pounds; off do., nominal; prime cottonseed meal, \$28.50 per ton of 2240 pounds; off do., nominal; soap stock, loose, 1.10 cents per pound; linters, per pound, choice, nominal; A, 3½ cents; B, 2½ cents; C, 2½ cents; cottonseed in sacks delivered in

New Orleans, \$15 per ton of 2000 pounds; in bulk delivered in New Orleans, \$14 per ton of 2000 pounds.

Mr. Robert P. Skinner, American consul at Marseilles, makes an interesting report to the State Department at Washington, D. C., relative to the shipment of cottonseed oil from that port. Southern exporters will be interested to know this oil may possibly be the American re-shipped to American markets. The consul says: "I have taken the pains to procure a sample of the last consignment of cotton oil thus forwarded to the United States, and, after submitting it to local experts, find that there is a difference of opinion with respect thereto. One experienced manufacturer gives it as his opinion that it is nothing more nor less than American oil, or, at the most, a compound, while other experts, notably two of very high reputation, pronounced it a pure cotton oil crushed from Indian or Egyptian seeds. These experts are very definite on the point that this article is not of American origin and is not mixed with olive, sesame or other vegetable oils. Such tremendous strides have been made by the American oil manufacturers that their brands are known in this market not only among large buyers, but by small grocers, and even actual consumers. During the past year large quantities of American oil sold to Marseilles soap manufacturers have been resold upon arrival either for direct consumption or for further refining, the soap manufacturers having found it possible to replace this oil with cheaper vegetable oils of local manufacture. Thus the steady advance of the American cotton-oil industry threatens the soap industry with a new danger in the loss of a raw material once cheap, but now too valuable for their purposes."

The New Orleans Board of Trade, Mr. H. H. Smith, secretary, is circulating a copy of the following extract from the Constitution of the State of Louisiana exempting certain manufacturing industries from taxation for ten years: "There shall also be exempt from parochial and municipal taxation for a period of ten years from the first day of January, 1900, the capital, machinery and other property employed in mining operations, and in the manufacture of textile fabrics, yarns, rope, cordage, leather, shoes, harness, saddlery, hats, clothing, flour, machinery, articles of tin, copper and sheet iron, agricultural implements, and furniture and other articles of wood, marble or stone; soap, stationery, ink and paper, boat-building and fertilizers and chemicals; provided, that not less than five hands are employed in any one factory; provided, that nothing herein contained shall affect the exemptions provided for by existing constitutional provisions."

Arrangements have been practically completed for the consolidation of the Cotton Ginner's Journal of Waco, Texas, with the Weekly Tribune of that city, which will change the Journal from a monthly to a weekly. The Tribune, a well-established and widely-read Texas newspaper, is the property of Mr. A. R. McCollum, the founder and manager of the Cotton Ginner's Journal, and the consolidated publication will be managed by him, with no change in the distinctive policy of the Journal.

The Patterson Transfer Co. has contracted to haul and store about 9000 tons of wire and nails which the American Steel & Wire Co. is shipping from Pittsburgh to Memphis for distribution in the South. It is estimated that there will be in all 140,000 packages, and the shipment is made by seven barges.

## LUMBER.

[A complete record of new mills and building operations in the South will be found in the Construction Department.]

### LUMBER MARKET REVIEWS.

#### Baltimore.

Office Manufacturers' Record,

Baltimore, Md., January 8.

The week under review has developed very little expansion in the volume of trade in the various channels of the local lumber market. The various companies engaged in the industry have been making arrangements for the business of the new year, and stocktaking and repairs to mills have been in order. The business of the week has, therefore, been confined to light transactions generally, and dealers are not buying in large lots. The demand for lumber, however, is steady, and in all commercial woods the situation is regarded as very promising for the new year. The North Carolina pine trade is in good shape, and manufacturers have all they can do to supply the demand. A number of companies engaged in the North Carolina pine business are considering the plan of enlarging their plants and preparing for an increase in trade. Prices hold firm, with a hardening tendency. White pine is reported active, and prices strong, with the demand fair. In hardwoods there is a tendency towards higher prices for dry stock, both in oak and ash. Poplar is still in active demand, with values firm and stocks not excessive.

#### Norfolk.

[From our own Correspondent]

Norfolk, Va., January 6.

The new year has opened with a fair volume of business in every branch of the lumber industry of this section. It is yet too early, however, to report a general activity in certain lines, as the closing up of the old year's business will restrict operations somewhat for a few days. The outlook is regarded as favorable for a substantial business during the present year, and in North Carolina pine manufacturers are well satisfied with general conditions. The demand from New York, Philadelphia, Boston and the Middle States generally has been quite pronounced during the last half of the old year, and at present stocks at all milling sections are very light, while there has been only a slight accumulation at any time in the past year. At present some very large shipments are delayed on account of scarcity of cars, and manufacturers have in some cases more orders on their books than they can fill. Dressed lumber is in very good shape, and planing mills are working at their full capacity to supply the demand. Prices throughout the general list continue firm, with a hardening tendency, and should very severe weather prevail during the next sixty days lumber is likely to become scarce, and under a pressing demand prices are bound to advance. In hardwoods a considerable volume of business is reported, and there is a firmer feeling in the market for all commercial woods. Shipments by water have been moderate, and the offering of desirable tonnage is not excessive, while rates are well maintained. Late charters have been closed for vessels at \$2.50 to \$2.65 to New York and \$3.50 to \$4 to Boston and eastward.

#### SAVANNAH.

[From our own Correspondent]

Savannah, Ga., January 6.

The new year opens with a fairly active lumber market in Southern Georgia and the general conditions surrounding the industry favorable for a good trade during the winter and spring months. At mill-

ing sections, as usual during the holidays, business has been in many cases suspended, millmen enjoying the festive season and the various companies attending to repairs of plants and getting in good shape for successful operation. The demand for lumber from the usual sources is setting in already, and as shipping facilities are now more favorable, considerable lumber is likely to go out in the next sixty or ninety days. All advices from points of consumption are very favorable, and the business of the present year is likely to be of a substantial character. At nearby ports in Georgia the feeling among lumbermen is of a similar nature. At Brunswick the year closed with shipments larger than ever before in the history of that port. Shipments for eleven months ending November 30, 1901, were 124,200,000 superficial feet of sawn timber and lumber, 140,270 cubic feet of hewn timber, besides crossties valued at \$13,691, shingles at \$5348, and logs, laths, piling, etc., valued at \$31,772. The year at Brunswick opens under very favorable conditions, the demand being brisk and prices firm and a shade higher on certain grades. Rates reported during the week for charters were \$5.25 for lumber Darien to New York; Brunswick to St. John, N. B., with lumber at \$7.50; Brunswick to Baltimore with crossties at 14 cents, and \$5 to New York for lumber.

#### Mobile.

[From our own Correspondent]

Mobile, Ala., January 6.

During the past week lumbermen, as usual at this period of the season, have been engaged in closing up the books for last year and preparing for the trade of the new year. Conditions at present in all avenues of the timber trade are considered very favorable, and prices are now considered firm at 15 cents per cubic foot. At a meeting of the Gulf Coast Lumbermen and the Sawn Timber Manufacturers' Association, held here on the 1st inst., the members present were unanimous in their determination to curtail the output and maintain prices. The only business transacted was that the association agreed to give the Shippers' Association of Pensacola, Fla., 100,000 pieces from the Pensacola mills and 50,000 pieces from the Mobile mills at 15 cents.

The Shippers' Association agreed to take this quantity up to May 1, providing it get the preference on the remainder of the cut at a price to be agreed upon. The lumber trade is in fair shape, the interior demand generally absorbing the output. Mills in this section are all busy, and manufacturers are generally firm holders, and not disposed to sell below list figures.

The shipments of lumber last week amounted to 2,797,952 feet, and for the season 29,245,254 feet, against 31,776,787 feet in 1900-1901. The demand at the moment for lumber is mostly from Cuba and South America. The shipments of sawn timber last week aggregated 164,452 cubic feet, and of hewn timber 19,881 cubic feet. Timber freights continue steady, last business being at 85/., January, for timber from the Gulf to the Continent. Lumber rates are \$5.75 and free wharfage Mobile to Havana, and \$6.50

for dry cypress from the Gulf to New York.

#### JACKSONVILLE.

[From our own Correspondent]

Jacksonville, Fla., January 6.

The progress in the commerce and industry of Florida during the past year has been like that of other States in the South—of increased volume as compared with previous years. The collector of customs, in his annual report of business at the port of Jacksonville, makes a showing which, like all other ports of Florida

on the east and west coast, shows a most pronounced development during 1901. The lumber industry of Jacksonville alone has been remarkably successful during the past year. With unbounded timber resources to draw from, the output of mills has been carefully watched in order to meet the general demand for lumber, and at the same time allow but a slight accumulation of stock. Under a brisk inquiry from Northern and Eastern centers prices have been well maintained, and at the moment the list of values for all grades and dimensions is firm and hardening. Both in yellow pine and cypress lumber the situation is all that could be desired, and manufacturers are generally satisfied with prospects of trade for the new year. During the past year the coastwise shipments of wood products from Jacksonville were as follows: Yellow-pine lumber, 113,959,534 feet; cypress lumber, 4,205,267 feet; shingles, 30,277,318; crossties, 544,844, and naval stores, 177,822 packages. The foreign shipments were 10,381,577 feet of lumber and 1,458,800 shingles. Woodworking factories have enjoyed a prosperous year; 16,695 packages of doors, 102,560 orange boxes and 195,892 vegetable and fruit crates were shipped. The Clyde Line service to New York and Boston has had a very prosperous year, carrying out each trip a full complement of lumber and other wood products. The lumber market at the moment may be written active, with values firm and advancing, with business at the mills increasing, orders being numerous for prompt and near delivery. The offering of vessels for carrying lumber is good, and arrivals in early January will be liberal. The freight market is very steady, with rates unchanged.

#### Lumber Notes.

Exports of lumber from the port of Fernandina, Fla., in December, 1901, amounted to 7,762,911 feet, of which 5,784,538 feet were domestic and 1,978,373 feet foreign.

The Hinds Lumber Co. of Big Springs, Howard county, Texas, has been chartered, with a capital stock of \$10,000. The incorporators are J. N. Rushing, W. A. Hinds and C. C. Hinds.

The A. C. Oliver Lumber Co. of Morganton, W. Va., recently incorporated, has received its charter. It is capitalized at \$50,000. Its plant will be located in a timber tract which will be taken out in the Dellsow region.

The shipments of staves from the port of New Orleans for the year 1901 amounted to 25,144,854 pieces, valued at \$2,528,747, against 23,283,799 pieces, valued at \$2,338,577 in 1900, a gain of 1,861,055 pieces in favor of 1901.

Mr. E. E. Price, exporter and dealer in hardwoods, with offices in Manufacturers' Record Building, Baltimore, has issued his calendar for 1902. This calendar is among the most artistic of any yet received, the coloring and other lithographic points being of a high order.

The Farrell Bros. & Walkins Lumber Co. of Little Rock has been incorporated, with a capital stock of \$60,000, all subscribed. The officers and incorporators are: R. E. Farrell, president; Omer Farrell, vice-president; William E. Farrell, secretary and treasurer, and J. A. Walkins.

The shipments of timber and lumber from the port of Wilmington, N. C., for 1901 amounted to 42,695,674 feet, of which 33,316,477 feet were coastwise and 9,379,197 feet foreign, against 35,539,244 feet in 1900, of which 23,503,067 feet were coastwise and 12,036,177 feet were foreign. Shipments of shingles in 1901

aggregated 6,776,890, against 5,204,825 in 1900.

The Snowbird Lumber Co. of Asheville, N. C., has been chartered, with a capital stock of \$150,000. All the incorporators except Duff Merrick are residents of Philadelphia and Elkins, W. Va. Mr. Merrick is designated as the principal agent of the company. The company will operate saw-mills and deal in all kinds of lumber.

The schooner J. S. Hopkins arrived last week at Salisbury, Md., from Florida with 1,200,000 shingles consigned to W. B. Tilghman & Co. During 1901 the sales of Florida shingles by this firm amounted to over 8,000,000, making a gross business of \$50,000. The firm is now arranging for larger consignments during 1902.

The coastwise exports of wood products from the port of Jacksonville for the year 1901, as reported by the collector of customs, were as follows: Yellow-pine lumber, 113,959,534 feet; cypress lumber, 4,205,267 feet; shingles, 30,277,318 feet; crossties, 544,844, and naval stores, 177,822 packages. The foreign exports were 10,381,577 feet of lumber and 1,458,800 shingles.

An important change in the shipments of lumber from Petersburg, Va., is about to be made by Col. E. M. Field and associates. These parties have purchased a large planer and saw, and the lumber in future will be dressed before it is shipped. By this method larger cargoes can be shipped than in the rough, while it can be dressed much cheaper than it can at Northern points.

The Builders' Supply Co. of Mobile, Ala., commenced operations last week in its improved plant in that city. The company has erected a new mill building and added a planing mill to its equipment and introduced various machinery appliances to increase its output. The company makes a specialty of sash, doors, blinds, moldings, cypress shingles and dressed and rough lumber, etc.

The shipments of lumber from the port of Mobile, Ala., last week aggregated 2,797,952 feet, and for the season 29,240,254 feet, against 31,776,787 feet in 1900-1901. Shipments of timber for the week amounted to 164,452 cubic feet of sawn and 19,884 cubic feet of hewn. Other woods shipped were 10,620 cubic feet of oak, 10,049 cubic feet of poplar, 30,819 crossties and 277,217 staves.

The Reynolds Manufacturing Co. of Norfolk, Va., has been chartered, with a capital stock of from \$50,000 to \$10,000. The company proposes to manufacture lumber in Virginia and North Carolina. The officers of the company are: J. M. Reynolds, president; Richard McElwayne, vice-president; B. B. Reynolds, secretary and treasurer. These, with Messrs. J. M. Allen and W. R. Robbins, constitute the board of directors.

The Norwegian ship *Regina*, 554 tons, was loading last week at Pensacola a cargo of staves for Cetee, France. This will be the first solid cargo of staves shipped from Pensacola in some years, although partial shipments are sent out on almost every steamship. The *Regina*'s cargo will consist of 135,000 pieces, shipped by J. M. Rosegrant of Savannah. Similar shipments by the same party will be made in future.

The Gulf Red Cedar Co., whose mill is located at Cedar Plains, near Falkville, Ala., will soon be put in operation. The machinery has arrived, and will be placed in position at once. Cedar blocks for making pencils will be cut and shipped from Falkville to Europe, where they will be prepared and polished and re-

turned to New York, where the graphite will be placed in them. The industry represents an outlay of about \$25,000, and will employ quite a number of skilled laborers.

The Standard Arm & Pin Co., manufacturer of crossarms, brackets and pins for telegraph and telephone poles, is putting in a plant at Laurel, Miss., which will be in operation by the 15th inst. This company operates plants at Gadsden, Ala., and in the Blue Ridge mountains of Georgia, and its product is marketed all over the West and Northwest and Canada, as well as throughout the South. The building for the plant is now under construction. The daily capacity of the plant will be one carload of crossarms, brackets and pins.

C. H. Bradley & Co., lumber inspectors and shippers, of Duluth, Minn., have prepared their annual statement of lumber production, etc. The statement relates only to the saw-mills and yards on the Duluth-Superior harbor, and covers the year ending December 1, 1901. The total cut for that period was 423,511,000 feet; total stocks on hand December 1, 1901, amounted to 142,062,000 feet, and the total of unsold stocks at that date was 51,503,000 feet. The lumber shipments from the head of the lakes for the year amounted to 449,747,000 feet.

The Saw-Mills Association and the Gulf Coast Timber Association met at Mobile, Ala., on the 1st in joint session for the purpose of taking some action looking to the curtailment of the manufacture of sawn timber and the maintenance of the price at fifteen cents. After a full discussion of the matter in conference a committee was appointed to consider a plan of action and report at the next meeting, to be held in February. After the conference the Sawn Timber Association met and agreed to sell to the Shippers' Association of Pensacola 100,000 pieces of sawn timber from Pensacola and 50,000 pieces from Mobile at fifteen cents. The Shippers' Association agreed to take this amount up by May 1 if it is given the preference after that time at a price to be agreed upon.

The biggest deal in the history of the lumber business was consummated last week at Beaumont, Texas, when the Kirby Lumber Co., with a capital of \$10,000,000, accepted the following lumber plants: The Reliance Lumber Co., the Texas Tram & Lumber Co., including the Village Mills Co., the Beaumont Lumber Co. and the Adams Mill at Call. The deposits of two of the Beaumont banks were thus increased about \$3,500,000, and on the 2d inst. the newly-received funds were transferred to the credit of the various concerns purchased by the Kirby Lumber Co. The purchase of the Bancroft Lumber Co. by the Kirby Company will not be closed for about thirty days, and there are other plants contracted for by the Kirby Company which, it is said, will make the total expenditure for saw-mills about \$5,000,000. The officers of the company as announced are as follows: John Henry Kirby, president and general manager; Emmett A. Fletcher, manager of mills; M. J. Godfrey, general storekeeper; Frank M. Aldridge, manager of logging; Samuel A. McNeely, manager of tie department; George R. Wansborough, traffic manager; Samuel T. Swinford, general sales agent; W. W. Wilson, general purchasing agent; W. Y. Fuqua, general auditor, and Fred A. Helbig, treasurer. Other appointments will be made in a few days.

A test of the new floating dry-dock at New Orleans with the collier *Sterling* was a success. There was not a hitch or a jar during the whole test.

## PHOSPHATES.

### Phosphate Markets.

Office Manufacturers' Record,  
Baltimore, Md., January 8.

The tone throughout the local phosphate market continues steady for all lots suitable for the fertilizer trade in this section. The demand, however, from fertilizer men is not urgent, but later on considerable business is expected. From the various mining sections in the South reports are all favorable for a considerable output during the present year. Shipments from the Florida ports have been falling off during the holidays, but a large increase is expected in January and February, considerable tonnage having been chartered for those months. The situation in Florida among miners is at the moment much improved, and a vigorous campaign is looked for during the winter and spring months, as some new plants will be in operation and new deposits opened. Prices are now more satisfactory, and the demand from foreign sources more decided for high-grade rock, which, by the way, is at the moment far short of the stock on hand last year. South Carolina rock is improving in shipments, both foreign and domestic, and the market is steady for both crude and hot-air-dried rock. In Tennessee the situation at the opening of the new year is much more favorable than at the same date last year. Stocks above ground have been well cleared up, and with favorable weather mining will be pursued with the usual vigor. Prices for both domestic and foreign rock are good.

### Fertilizer Ingredients.

The local market for ammoniates is fairly active, with considerable inquiry from the South. There is also a fair Eastern inquiry, but the volume of business is, as usual, moderate for this period of the season. Both dried blood and tankage is firm, the latter slightly higher. Sulphate of ammonia is steady, and in fair demand. Nitrate of soda is very steady. Messrs. Thos. H. White & Co., in their review of the market for the month of December, say: "There has been a fair Southern demand for ammoniates during December, and prices have been fairly steady. Concessions at times were made on both blood and tankage, but the offerings were freely taken and the tone of market recovered. Some large deals of crushed tankage for January-February delivery have been made at \$2.27 $\frac{1}{2}$  and 10 c. i. f. basis Savannah or Charleston."

The following table represents the prices current at this date:

Sulphate of ammonia (gns)....	\$2 77 $\frac{1}{2}$ qd 2 80
Nitrate of soda, spot Balto....	1 50 qd 1 92 $\frac{1}{2}$
Blood.....	2 23 $\frac{1}{2}$ qd 2 30
Azotoline (beef).....	2 30 qd —
Azotoline (pork).....	2 30 qd —
Tankage (concentrated).....	2 17 $\frac{1}{2}$ qd 2 20
Tankage (9 and 20).....	2 25 & 10 $\frac{1}{2}$ qd 2 10
Tankage (7 and 30).....	21 00 qd 22 00
Fish (dry).....	26 00 qd 27 00

### Phosphate and Fertilizer Notes.

The schooner *L. Mulford* cleared from Charleston, S. C., last week with 791 tons of phosphate rock for Barren Island.

The total shipments of phosphate rock from Port Tampa, Fla., for the year 1901 amounted to 347,015 tons, valued at \$2,282,000.

The total shipments of Tennessee phosphate rock from the port of Pensacola for December, 1901, aggregated 8508 tons to European ports.

The Consolidated Phosphate Co. at Fort Ogden, De Soto county, Florida, is now in full operation, employing a large number of hands.

It is stated that the Adams Machine Co. is making preparations to mine boul-

der phosphate near Morriston, in Levy county, Florida. This company expects to erect a phosphate plant at its mines in the near future.

The fertilizer department of the Mississippi Cotton Oil Co. at Meridian, Miss., together with a car loaded with fertilizers, was destroyed by fire on the 2d inst. The total loss is estimated at \$50,000, fully covered by insurance.

The steamer *Northeastern*, which arrived at Baltimore on the 4th inst. from Punta Gorda with 3000 tons of phosphate rock, went aground while attempting to reach the Grafflin Fertilizer Co.'s pier at Canton. She was still hard and fast on the 6th inst.

Messrs. J. M. Lang & Co. of Savannah, Ga., report the shipments of high-grade Florida phosphate rock from that port for the month of December, 1901, at 11,031 tons; amount previously reported 152,408 tons, making the total shipments for the twelve months of 1901, 163,439 tons.

The shipments of Tennessee phosphate rock from the port of Pensacola for the week ending December 29 amounted to 3114 tons. Last week the Gulf Transit Co. cleared the steamship *Ida* for Genoa with 2398 tons of phosphate rock and the steamship *Neptune* with 835 tons for Bremen among their cargoes.

Shipments of phosphate rock from the port of Punta Gorda for December amounted to 10,928 tons, all coastwise; previously reported during the year, 17,095 tons coastwise and 18,790 tons foreign, making a grand total for the year 1901 of 46,813 tons, of which 28,023 tons were domestic and 18,790 tons foreign.

The Davison Chemical Co. of Baltimore county, Maryland, has been incorporated, with a capital stock of \$500,000. The incorporators are Calvin T. Davison, Geo. W. Davison, Edward W. Davison and John H. Wight. The company is organized for the purpose of engaging in the manufacture and sale of chemicals. The principal office will be in Baltimore.

Official announcement has been made by the Louisville & Nashville Railroad of the movement of phosphate rock from the Mt. Pleasant district in Tennessee for the eleven months ending December 1, 1901, as follows: Total shipments for export, 115,337 gross tons; total shipments for domestic ports, 202,916 gross tons, making a total of 318,253 gross tons shipped from the district.

Stockholders of Swift & Co., packers, of Chicago, have voted to increase the capital stock from \$20,000,000 to \$25,000,000, the proceeds of the new stock to be devoted to extensions of the business. The annual report of the company gives the total distributive sales for the year at \$200,000,000, compared with \$170,000,000 last year. The company reports total assets of \$42,604,332, compared with \$36,720,000 in 1900. The surplus now amounts to \$3,746,005, compared with \$2,446,606 in 1900.

A rumor was current at Mt. Pleasant, Tenn., last week that Mr. J. D. Stewart and associates, organizers of the Federal Chemical Co. of Louisville, Ky., had purchased from Messrs. Ruhm Bros. a 51 per cent. interest in what is known as the "Southport Field." This property, it is stated, will be conveyed to a new corporation having a capital stock of \$200,000, of which the Federal Chemical Co. will take 51 per cent. and Ruhm Bros. 49 per cent. The tract sold contains 940 acres of land, having, it is said, shown over 500,000 tons of high-grade phosphate rock. The entire village of Southport, in Maury county, is embraced in the property.

ch  
mot  
Ele  
cage  
lath  
cou  
cha  
mot  
arm  
chin  
a se  
mot  
and  
The  
from  
a ha  
obvi  
trou  
suffi  
not  
can  
conv  
ing  
the  
repa  
yea  
Th  
tor  
stea  
ture  
imp  
whi  
the  
the  
The  
B B  
zles  
and  
at th  
und  
cau  
joint  
row  
pact  
and  
wate  
wee  
Th

## MECHANICAL.

## Victor Motor Lathe.

A very valuable addition to the equipment of the dental practitioner and for purposes where a small amount of me-

any pressure from 60 to 150 pounds, but from 100 to 120 pounds has been found to be the proper pressure to use for ordinary scale. Boilers with scale one-quarter inch thick on the back end of 18-foot tubes have been cleaned at the rate of five minutes' application to each tube. If neces-

bearings are ball-bearing of the latest improved type; in short, the material and workmanship are the very best. It is manufactured by the Atlas Pipe Wrench Co., 121 Liberty street, New York.

## Where the Bowsher Feed Mills Are Made.

The owners of the plant shown in this illustration have good reason to be proud

manufacturer claims exceptionally light-running qualities, while the mills are fitted with numerous labor-saving devices and attachments that are of great practical value to the user. One feature of the Bowsher mills of special interest to the Southern trade is the fact that the mills will grind corn with the shuck, also handle cottonseed, alone, or mixed with grain. The Bowsher Company has just had a



THE VICTOR MOTOR LATHE.

chanical power is required is the electric motor lathe manufactured by the Victor Electric Co., 55-61 Market street, Chicago, illustrated herewith. The Victor lathe is an ironclad dustproof motor, so constructed that the buffs and grinding wheels can be attached directly to the

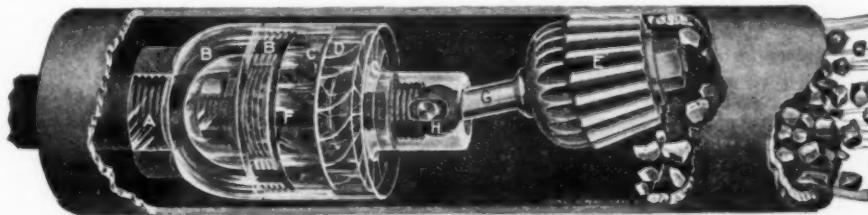
sity demanded, a number of cleaners could be used at one time, thereby reducing the time of boiler cleaning materially. Two cleaners in use at once would reduce the time of cleaning one-half, and using a larger number of cleaners would make a corresponding reduction in time necessary

of it, not because it is of mammoth proportions, but because its growth is an index of the merit of the machines they put out. It is thoroughly adapted to the needs of their business, and equipped with

new side-track completed to its warehouse, and has replaced the old electric-lighting plant with a new one of enlarged capacity. Such are some of the many improvements to increase facilities for production. A handsome booklet describing the Bowsher mills may be had by addressing the N. P. Bowsher Company, South Bend, Ind.

## The Sterling Forge Systems.

Herewith is shown a cut of the Sterling blower systems as applied to blacksmith forges for blowing same and exhausting the fumes, thereby keeping the air in shops free from smoke, gases, etc. The Sterling Blower & Pipe Manufacturing Co. of Hartford, Conn., has made a special study of this work, and has designed special attachments to suit the requirements of the work done, the style of forges used and the volumes of heat and smoke, which are very important items, and can



THE ATLAS TUBE CLEANER.

armature shaft. The speed of the machine is perfectly controlled by means of a seven-speed switch, shown on top of the motor; the mandrels run absolutely true, and the armature being perfectly balanced, there is no noise in operation.

The cost of operating this machine is from seventy-five cents to a dollar and a-half per month. Its advantages are obvious. There is no belt slippage or belt trouble of any kind. Its own weight is sufficient to hold it in place, so that it is not necessary to fasten it down; hence it can be shifted around at will to suit the convenience of the operator. The wearing parts are very durable, so that after the two-year guarantee is up the cost of repairs will not average over \$1.50 per year.

## Atlas Tube Cleaner.

The Atlas tube cleaner is a perfect motor designed to run either by water or steam. The source of power is a miniature water-wheel of the best design of the impact and turbine type D, connected to which is the power shaft F; at the end of the shaft is a toggle joint H, connecting the cuttershaft G, on the end of which is the cutter E, which removes the scale. The water enters at A into the chamber B B, and through the port holes or nozzles C, striking the buckets of the impact and turbine wheel D, causing it to revolve at the rate of 4000 revolutions per minute under a pressure of 100 pounds, and causes the cutter E, through the toggle joint H, to revolve in a gyrating and roweling motion. The rapidity of the impact disintegrates and dislodges the scale, and is washed through the tube by the water passing through from the water-wheel D.

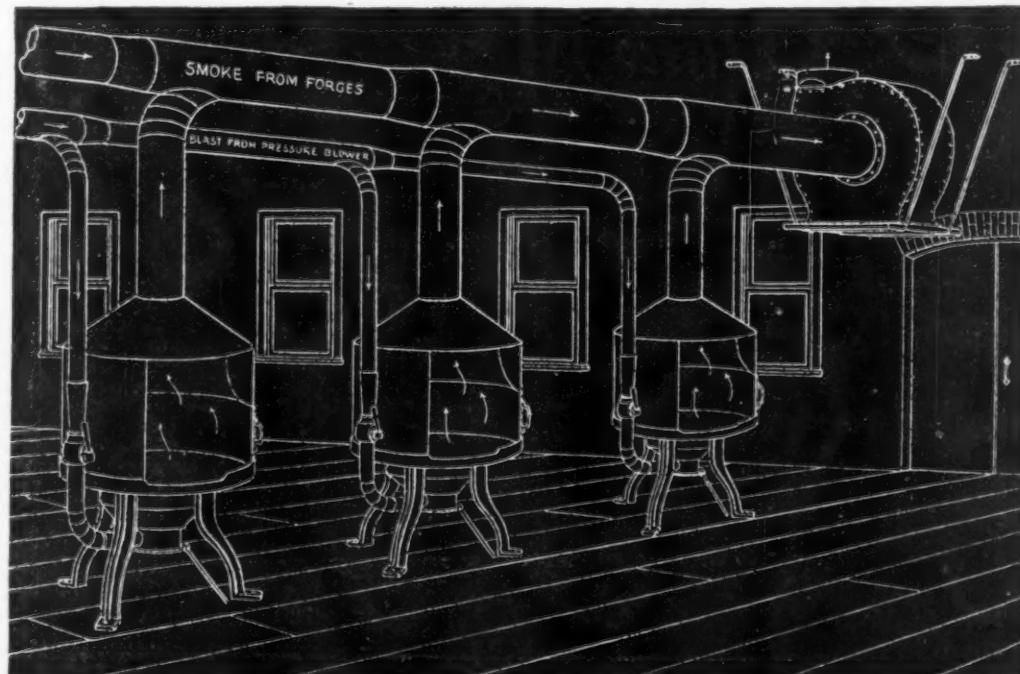
The tube cleaner is designed to work at

to remove the scale. The number of cleaners that could be used would only be limited by the pump capacity of the plant.

The amount of water used by the Atlas tube cleaner has been reduced to a minimum, as the volume of water is controlled

the latest and best machinery. It represents years of hard work, and its continual growth shows the deserved popularity of the Bowsher mills.

The Bowsher feed mills are made in a variety of sizes, ranging from two to



THE STERLING BLOWER SYSTEMS AS APPLIED TO BLACKSMITH FORGES.

by six circular nozzles one-eighth inch in diameter, the combined area of which is very small. The best material is used in its manufacture, and the construction represents the highest class of workmanship. The machine is built very strong, and the

twenty-five horse-power. They are suited for crushing and grinding ear corn, and grind all kinds of small grain. The reduction in the Bowsher mills is made on conical-shaped grinders, something different from those used in any other mill. The

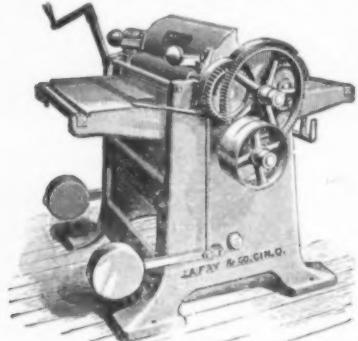
only be determined by long and extended experience. These systems are in use in a number of blacksmith shops, and a recent large order received was for the equipment of the Townsend & Downey Shipbuilding & Repair Co. blacksmith

shops at Shooter's Island, N. Y. As a matter of fact the above plant is equipped from end to end with the Sterling systems for handling shavings, sawdust, smoke, etc.

The Sterling Blower & Pipe Manufacturing Co. has established at Greensboro, N. C., a Southern office, in order to give its Southern customers the best of attention. Any parties who are in the market for anything in the line of its manufacture can address the company at Hartford, and it will be pleased to have a representative call and design systems free of charge, guaranteeing satisfactory results.

#### Improved Medium Surfacer.

The surfacer herewith illustrated has become very popular with woodworkers,



No. 2 SURFACE PLANER.

owing to its many commendable features. The planer is especially designed for general work in nearly every line of wood-working plants that do planing, and it will with very little power surface in a superior way on all kinds of soft or hard

work. The bed is hung between gibbs in the frame, thus accurately taking up all wear. The cutterhead and feed rolls hang in the frame, preserving the same relative position with bedplate, which is a great improvement over old methods of making independent adjustments. The feeding rolls are large, strongly geared, and the first pair heavily weighted. The long bed has friction rolls, and all parts are thoroughly braced, planed and bolted.

The maker, J. A. Fay & Egan Co. of No. 270 to No. 290 West Front street, Cincinnati, Ohio, will furnish any additional information on request, together with terms and cuts showing it in detail and to better advantage.

#### New Six-Inch Outside Molder.

These cuts show a strictly up-to-date twentieth-century outside molder. It has the merits of being convenient to set up and adjust, is strongly driven, has a powerful feed, and the shafts and arbors are large, thus preventing liability of springing or otherwise getting out of true. The framing is heavy and solid, and of such design as to allow as convenient access to the inside vertical head as to any other head or portion of the machine.

The top-head arbor has an outside bearing, which is easily removed. This bearing is not only firmly bolted to the frame, but extends to the floor, consequently increasing the floor space of the machine and adding to its steadiness. The feed consists of three feed rolls, and there are two rates of feed. The manufacturer claims that no machine obtainable excels this one for capacity or convenience, and it is sent out under a strong guarantee for good performance. Inquirers may address

would rather have the existing constitution, negro suffrage and all, than a new one with a provision for a corporation commission.

#### TRADE NOTES.

To Lumbermen.—In another column will be found reference to a tract of 25,000 acres of long-leaf pine timber located near a railroad. John T. Hammond of Nettle, Fla., may be addressed.

Mechanism for Charleston.—The Royal Bag Manufacturing Co. of Charleston, S. C., has recently installed an electric plant. The General Electric Co. furnished the generator and the Ball Engine Co. of Erie, Pa., the engine.

Adding to Its Business.—The Maryland Lime & Cement Co. of Baltimore has decided to add pressed brick in all colors and vitrified paving brick to the stock it carries, and will be glad to quote prices to anyone interested.

In Its New Home.—The new plant of the A. T. Atherton Machine Co., recently described in these columns, has been completed, and the company announces that it is located in its new quarters. The general offices of the company are at the works, which are situated on Prairie avenue, Pawtucket, R. I.

Branching Out in the South.—The Southern business of the American Electric Fuse Co. has expanded to such an extent that it has opened an office and warerooms in the Empire Building, Atlanta, Ga., which will be under the management of Price E. Allison. The business of this company has actually trebled within the last year.

An Interesting Announcement.—The Rogers Screw Co. of Providence, R. I., announces that it is now prepared to furnish all sizes of wood screws in both flat and round heads, and in steel, brass and bronze, with the different finishes required. It has equipped its plant with machinery of the latest construction especially for this purpose.

Industrial Opportunities.—By addressing the Richmond Industrial Development Co. of Richmond, Va., manufacturers will learn of an excellent opportunity to secure space for machinery with ample heat and power. The company in question has erected a building especially for this purpose. Further details will be found in the advertising columns.

A Large Contract.—The school board of Baltimore has given a contract for thirty single keyboard typewriters, which will be used in various schools. The Remington Standard typewriter has been chosen after examining several makes, and the contract is a high testimonial to the merits of this machine. Messrs. Wyckoff, Seamans & Benedict are to be congratulated upon their success.

Consolidated Interests.—The announcement is made that the Yawger-Lexow Company has been formed to represent the consolidated interests of the firms in which Theodor Lexow and I. C. Yawger are interested. The new company will continue to make a specialty of importing and dealing in carbon and bortz, and diamonds for mechanical purposes. It will be located at 12-16 John street, New York.

Bright Outlook for 1902.—Judging from recent orders secured by Mr. F. M. Hicks of the Hicks Locomotive and Car Works of Chicago, the outlook for the present year for this concern is exceedingly bright. The orders include two locomotives for the Vera Cruz Pacific Railway of Mexico, three switch engines for the Lake Superior & Ishpeming Railroad, and several passenger and combination coaches for the Quebec Southern Railroad.

Increasing Its Capacity.—The American Bridge Co. has purchased the properties heretofore owned by the Detroit Bridge & Iron Co. of Detroit, Mich., and the same will hereafter be known as the Detroit plant of the American Bridge Co. Mr. Max J. L. Fowler has been appointed manager. The plant thus becomes a part of the Western division of the American Bridge Co., under the jurisdiction of Mr. August Ziesing, Western manager, in Chicago.

An Important Project.—The Maltby-Hornaday Company of Cincinnati, Ohio, has recently been successful in promoting mining interests at Pine Hill, Ky., and the Rock Castle Mining & Development Co. has been formed, with \$300,000 capital stock, for the purpose of carrying out the enterprise.

The property includes 2000 acres of coal land on the line of the Louisville & Nashville Railroad. Bonds will be issued to finance the project, and the Maltby-Hornaday Company will be pleased to answer any inquiries in regard to the new corporation.

An Important Industry.—The organization of the Meldrum Campion & Chemical Co., which is detailed elsewhere in this issue, means the addition of a very important industry to the list of Southern manufacturing plants. The financial plan has been prepared after careful calculations, and the securities offered the public would seem to be very desirable from an investment standpoint. The personnel of the company includes Mr. Edmund Willcox, auditor, who is a chartered accountant both in England and this country. Mr. Willcox has offices in London and New York, also in Boston at 42 Court street.

Advertises Itself.—The flour-mill apparatus manufactured by the Nordyke & Marmon Company of Indianapolis, Ind., has the merit of advertising itself on account of its superior quality. Instances of its performance are continually being made public by letters from patrons, who have found it to be entirely satisfactory. The head miller of the Voight Milling Co. of Grand Rapids, Mich., states that the square sifters installed in this plant are always reliable, no matter what are the weather conditions. Incidentally it may be said that the Nordyke & Marmon Company has considerably enlarged its plant and installed machinery in order to meet the increasing demand in its orders. Thomas M. Van Horn has been added to the staff of traveling salesmen for the company.

Important Combination.—The organization of the Chicago Pneumatic Tool Co. has been completed, and it has taken over the business and plants of the Chicago Pneumatic Tool Co. of Illinois, the Boyer Machine Co., Detroit, Mich.; the Chisholm & Moore Crane Co. of Cleveland, the Franklin Air Compressor Co. of Franklin, Pa., and the New Tatte-Howard Pneumatic Tool Co., Limited, of London. The company starts with a working capital very largely in excess of \$1,000,000, of which more than 50 per cent. is in actual cash. The actual earnings of the constituent companies before this organization were at the rate of \$700,000 per year, which, after paying fixed charges and sinking fund under the mortgage, leaves 11 per cent. earnings on the stock. Mr. Duntley, the president of the company, is of the opinion that these earnings will be very largely increased as the result of the unification of these properties, and that one of the great needs is accomplished—getting sufficient capacity to supply the trade and take advantage of the large and increased business which is constantly offering. The executive committee is as follows: J. W. Duntley, chairman; Charles M. Schwab, Max Pam. The officers are: J. W. Duntley, president; W. O. Duntley, vice-president; Edward Y. Moore, second vice-president; Ernest P. Wenger, treasurer; Leroy Beardsley, secretary; S. G. Allen, assistant secretary; Joseph Boyer, mechanical engineer; A. J. Doughty, general superintendent; Pam, Calhoun & Glennon, general counsel.

Birmingham Engine-Builders.—Financially strong, extensive in its operations and directed by shrewd business men is the Hardie-Tynes Foundry & Machine Co. of Birmingham, Ala., manufacturer of Corliss and side-valve engines, hoisting engines, air compressors, mining, mill machinery, etc. This concern is now occupying its new works, which are complete in every detail. The plant occupies a lot 500x400 feet. The pattern shop is 75x100, three stories; the machine shop, 100x200, is a model, and is equipped with an electric traveling crane for handling parts of machines of any size and weight. The foundry is 100x200, and there are two cupolas, the melting capacity fifty tons each per hour. The power-house is 60x80, which is equipped with two Hardie-Tynes Corliss engines, one of 150 horsepower and the other of twenty-five horsepower, the former furnishing the motive power and the latter the power for the electric-light plant. Two lines of tracks run into the works, one that comes directly into the machine shop and the other a material track that delivers raw material to its respective place. Side-tracks connect with the Frisco and Central of Georgia Railroad. These works are running night and day, and find it impossible to keep up with its orders. Its trade is not confined to the South, for it has shipped and is shipping East, having recently sent its engines to Jersey City, two Corliss engines to Minneapolis, and has orders from Kansas City, Delaware, Maryland and New York city. It is fully prepared to submit estimates on any kind of work in its line.



FIG. 2—NEW SIX INCH OUTSIDE MOLDER.

woods. It is made in three sizes, to plane sixteen, twenty and twenty-four inches wide, and from one-sixteenth to six inches thick. Pressure bars are fitted on each side of the cylinder for planing thin and short stuff, and also for producing a fine surface on the material. The frame is

the H. B. Smith Machine Co., Smithville, N. J.

Considerable opposition has developed in Virginia against the proposition before the constitutional convention of that State to create a corporation commission. Pro-

tests have been heard from manufacturing corporations and other sources on the ground that it will prevent capital from coming to Virginia, and to the committee of the convention having the subject especially in charge one speaker said that he

solid, insuring great strength and solidity, and the crucible-steel cylinder has lips to break the chip. The bed is raised and lowered by crank and rod convenient to operator, and is connected by gears to raising screws for different thicknesses of

# CONSTRUCTION DEPARTMENT.

**THE MANUFACTURERS' RECORD**  
 seeks to verify every item reported in its Construction Department by a full investigation and complete correspondence with everyone interested. But it is often impossible to do this before the item must be printed, or else lose its value as news. In such cases the statements are always made as "rumored" or "reported," and not as positive items of news. If our readers will note these points they will see the necessity of the discrimination, and they will avoid accepting as a certainty matters that we explicitly state are "reports" or "rumors" only. We are always glad to have our attention called to any errors that may occur.

\*Means machinery, proposals or supplies are wanted, particulars of which will be found under head of "Machinery Wanted."

In correspondence relating to matters reported in this paper, it will be of advantage to all concerned if it is stated that the information was gained from the Manufacturers' Record.

It often occurs that the organization of a new company in a town is not known by the postmaster, and hence letters addressed to the company are returned marked "not known." The Manufacturers' Record reports the first organization of all companies, and our readers, in seeking to get into communication with them, should be very careful in deciding how to address them, and it is often advisable to add the names of one or more incorporators as an aid to the postmaster in delivering mail.

## ALABAMA.

Birmingham—Coal Company.—Underwood Coal Co. has increased capital from \$50,000 to \$500,000.

Birmingham—Oil Wells, Salt Mines, etc.—Tombigbee Oil, Gas & Salt Co. has been incorporated by G. B. Crow of Birmingham and S. A. Hobson of Woodstock, Ala., with capital stock of \$200,000, to bore for oil, crystal brine, salt, etc., to pipe and convey same, as well as manufacture and prepare the products for market.

Birmingham—Shoe, Harness, etc., Factory.—Electric Shoe Co. has incorporated, as recently reported, and will manufacture shoes, harness, trunks, etc.; machinery to be operated by electric-power.

Birmingham—Hardware Company.—Morton Hardware Co. has been incorporated, with capital stock of \$5000, by T. S. Morton, president; A. S. Morton, vice-president, and J. B. Morton, secretary and treasurer.

Birmingham—Clothing Factory.—Phillips-Hendon Company has been incorporated, with capital of \$15,000, by Walter C. Phillips, Frank M. Hendon and others, to manufacture clothing and overalls.

Birmingham—Medicine Factory.—Chartered: Rumaticon Company, with capital of \$2500, by Geo. L. Root, Dr. A. B. Daniel and others.

Bluffton—Iron Mining and Manufacturing.—Rome Petroleum & Iron Co. intends to develop thoroughly its iron-mines property and build furnaces for iron manufacturing; B. F. A. Saylor, manager, 1334 Unity Building, 79 Dearborn street, Chicago. (See under Rome, Ga.)

Huntsville—Furniture Factory.—R. E. Petrus, president Chamber of Commerce, is in correspondence with parties relative to locating a furniture factory in Huntsville.

Mobile—Mercantile.—Chartered: Weiss-Eichold Liquor Co., with capital stock of \$50,000, by J. W. Weiss, H. A. Horst, E. Eichold, Jr., and others.

Montgomery—Stationery Company.—Chartered: Montgomery Stationery Co., with capital of \$5000, by W. G. Montgomery, S. P. Montgomery and S. F. Frantz of Rogersville, Tenn.

Montgomery—Roundlap-bale Cotton Company.—H. E. Tener, Jr., of New York, Paul

Jones, Texarkana, Texas; A. R. Ninninger and R. G. Banks of Montgomery have incorporated Alabama Roundlap Bale Cotton Co., with capital stock of \$20,000.

Pratt City—Ice Plant.—People's Ice Co. and the City Delivery Co. have consolidated and will operate under the name of the latter company, installing a 100-ton plant.

Sheffield—Electric Plant and Water-works.—J. M. Hughes of Beaver Dam, Pa., has been awarded contract for installation of an electric-light plant and construction of water-works system at Sheffield.

Tuscaloosa—Iron-ore Lands, Furnaces, etc.—Central Iron & Coal Co. has purchased the ore lands of Martin Mining Co. and Woodstock Ore Co. (about 820 acres), including all the ore washers and other machinery; has a daily output of 4000 tons, which, in addition to other property, will enable company to operate two or more furnaces, and it is the intention to erect a second furnace.

Woodstock—Furnace.—Central Iron & Coal Co. of Tuscaloosa, Ala., has purchased and will blow in the Edwards furnace at Woodstock.

## ARKANSAS.

Little Rock—Lumber Company.—Chartered: Farrell Bros. & Watkins Lumber Co., with capital stock of \$60,000, by R. E. Farrell, president; Omer Farrell, vice-president, and Wm. E. Farrell, secretary and treasurer.

Paragould—Bottling Works.—Crystal Ice Co. will add bottling works to its plant.

Perry—Mercantile.—Chartered: Perry Mercantile Co., with capital stock of \$10,000, by G. W. Colvin and others.

Pine Bluff—Meat Company.—Chartered: I. J. Bloom Meat Co., with capital of \$1500, by I. J. Bloom (president) and others.

Salem—Electric-light Plant.—City will erect an electric-light plant. Address "The Mayor."

## FLORIDA.

Arcadia—Publishing.—De Soto Publishing Co., with capital of \$5000, has been incorporated.

Montbrook—Land Company.—Florida Land Co. has been incorporated, with capital of \$40,000, to conduct naval-stores plants, saw-mill, etc., by Adam McArthur, N. G. Wade and D. McArthur.

Morrison—Phosphate Lands.—Adams Machine Co. will begin development of boulder phosphate and erect a plant.

Pensacola—Lumber Mills.—Chartered: Modino Lumber & Brick Co., with capital of \$20,000, by Frank Johnson, president; John Baumeister, vice-president; Fred Johnson, secretary.

Plant City—Street Improvements.—City will expend \$2000 in improving its streets. Address "The Mayor."

## GEORGIA.

Atlanta—Electric Construction Company.—Southwestern Electric Co. has been incorporated, with capital stock of \$10,000, to conduct general electric construction business, by Wm. S. Connelly, Walter A. Taylor, T. M. Horne and others.

Blackshear—Starch Factory.—Meldrum Camphor & Chemical Co., which was re-

ported at length in our issue of November 28, expects, in addition to the manufacture of its present product, to engage in the manufacture of starch from the cassava plant; C. G. Murray, secretary.

Cedartown—Mercantile.—T. F. Stewart, B. M. Stewart and others have incorporated the Stewart Mercantile Co. to conduct general dry goods business; capital stock is \$7000, with privilege of increasing to \$25,000.

Columbus—Ice Factory, etc.—A. Illeges, J. P. Golden, T. E. Golden and J. P. Illeges have incorporated, with capital stock of \$35,000, the Goldens Ice & Coal Co., for the manufacture of ice and ice machines and refrigerating appliances.

Macon—Drug Company.—Henry J. Lamar and J. W. Cabaniss have incorporated the H. J. Lamar Drug Co., with capital stock of \$100,000, and privilege of increasing to \$200,000.

Montezuma—Refrigerating Plant.—Montezuma & Oglethorpe Electric Light & Power Co. will install a two to five-ton refrigerating plant.

Rome—Brick Works.—G. W. Trammell, J. H. Rhodes and W. F. McDuffie (manufacturers of brick) will erect a new \$30,000 plant.

Rome—Oil Wells.—Rome Petroleum & Iron Co. will erect a new \$30,000 plant.

Rome—Roundlap-bale Cotton Company.—H. E. Tener, Jr., of New York, Paul

Co., recently reported organized with \$1,000,000 capital, etc., will soon commence developing its 2100 acres of oil properties. B. F. A. Saylor is general manager; D. H. Craig, secretary, and R. R. Robertson, treasurer; offices at 1334 Unity Building, 79 Dearborn street, Chicago. (See under Bluffton, Ala.)

Tifton—Medicine Factory.—Goodman & Strozer, E. L. Vickers, H. H. Tift and others will form a \$15,000 corporation for the manufacture of patent medicines.

## KENTUCKY.

Ashland—Coal and Iron Mines.—Ashland Coal & Iron Railway Co., lately reported as having increased capital, states that such is not the case, but that it has sold to the Ashland Iron & Mining Co. its mining and manufacturing property, and is now engaged only as a carrier, operating twenty-two miles of railroad. The Ashland Iron & Mining Co. is fully equipped with necessary plants for continuing the mining and manufacturing formerly conducted by the railway company.

Hopkinsville—Tobacco Factory.—Hopkinsville Tobacco Manufacturing Co. has reorganized, as lately reported, with paid-up capital of \$25,000, and will increase its capacity to 500,000 pounds per annum. I. F. Campbell is president.

Lexington—Bakery.—Hautier-Cramer Company has been incorporated, with capital of \$15,000, by O. J. Hautier, John G. Cramer and G. W. Barney, and will build an addition to increase capacity; present capacity, 4000 loaves a day.

Louisville—Building Company.—Chartered: Home Building Co., with capital of \$20,000, by William J. Semonin, E. L. Denhard, C. F. Thomas and others.

Louisville—Oil and Gas Company.—Interstate Oil & Gas Co. has increased capital from \$2500 to \$10,000.

Paducah—Kentucky Flu-Spar Mining & Milling Co., reported lately as incorporated with capital of \$60,000, will manufacture a flux for iron and other ores and metals.\*

Pine Hill—Coal Mines, Coke Ovens and Brick Works.—Rock Castle Mining & Development Co. will be incorporated at Trenton, N. J., with capital stock of \$300,000, for developing 2000 acres of coal lands; will install new machinery, and also expects to manufacture coke, fire-brick, etc. Address J. P. Hornaday of the Maltby-Hornaday Company, Union Trust Building, Cincinnati, Ohio.

Winchester—Light Plant and Ice Factory.—Winchester Railway, Light & Ice Co., lately reported incorporated with capital of \$100,000, has elected E. S. Jouett, president; M. T. McEldowney, vice-president; J. M. Pickrell, treasurer and general manager, and John E. Garner, secretary. Company has purchased old light plant and street railway operated by horse-power; has commenced erection of brick and stone power-house 138x100 feet, to contain the three proposed new plants, namely, 25-ton ice plant complete, 300-horse-power automatic engine, 100-horse-power engine, alternating incandescent dynamo, 4000-light capacity, and 3000-light capacity alternator for street lighting, 30-kilowatt generator. All machinery contracted for except electric apparatus and cars. James M. Pickrell is general manager.

## LOUISIANA.

Iowa—Rice Mill.—Paul W. Daniels of Welsh, La., will erect a rice mill at Iowa.

Jennings—Machine Shop.—Heywood Bros. & Dobbins have purchased the machine shop of Boehm Bros., and will enlarge same, as recently reported.\*

New Orleans—Mercantile.—Alexander J. Dwyer and others have incorporated Dwyer Bros., Limited, with capital of \$35,000, to conduct dry goods business.

New Orleans—Grain Elevators.—Illinois Central Railroad Co. contemplates the erection of two large grain elevators at Stuyvesant Docks; J. T. Harahan, second vice-president, Chicago, Ill.

New Orleans—Shipbuilding Plant.—A \$150,000 stock company is organizing to establish plant for the construction of boats, especially newly-designed boats built to haul coal from the Alabama fields. Alex. M. Halliday will be president; R. C. Wilson will be engineer; Thos. J. Woodward, W. G. Wilmet and Walter Verlanders will be interested.

Ronoke—Rice Mill.—C. H. Zwick, W. R. Eber and J. M. Booze will establish a rice mill.

Shreveport—Ice and Cold-storage Plant.—Albert N. Hill has purchased site at \$10,500,

on which he will erect an ice and cold-storage plant.

## MARYLAND.

Baltimore—Stamping Works.—Baltimore Stencil & Manufacturing Co., Frank Gulden, president; John R. Karle, vice-president, and Ernest Sharp, secretary, has erected two-story building 80x200 feet on Bush street, in which will be installed machinery for manufacturing galvanized and japanned ware, etc.

Baltimore—Cutlery and Silverware Company.—Chartered: H. M. Justice Company, for manufacturing cutlery and silver-plated ware, with capital of \$5000, by Herbert M. Justice, Jos. M. Smith, John H. Kreh and others.

Baltimore—Mercantile.—Chartered: Chase Store Co., with capital of \$5000, by John A. Sheridan and others.

Baltimore—Gas Machinery.—National Gas Saving Co. has been incorporated, with capital of \$25,000, to manufacture illuminating machinery and appliances, by Christian F. Hershey, Thos. M. Dukehart, Chas. H. Harbins and others.

Baltimore—Quarry and Transfer Company.—Isaac H. Peddicord & Sons' Quarry & Transfer Co. has been incorporated, with capital stock of \$40,000, by Isaac H. Peddicord, Everett M. Peddicord and others.

Baltimore—Chemical Company.—Calvin T. Davidson, John Luntz, John H. Wright and others have incorporated the Davidson Chemical Co., with capital stock of \$500,000; office, Fireman's Building.

Baltimore—Storage Sheds.—J. J. Insley of Denton, Md., has contract for erection of the proposed storage sheds at Baltimore of the Armour Fertilizer Co.; structures will be 50x300 feet.

Burkittsville—Distillery.—Outerbridge Horsey, Thos. S. Lee Horsey, Chas. G. L. Horsey and others have incorporated Outerbridge Horsey Company, with capital of \$40,000; will acquire Horsey distillery and greatly increase capacity of same.

Durant—Mercantile.—Chartered: Mullen & Owen Co., with capital of \$50,000, by W. H. Mullen and others.

Jackson—Machinery Company.—Chartered: Martin & Gaddis, with capital of \$5000, to deal in machinery and machine supplies.

Maryland—Lumber Company.—A. B. Cogswell and others of Warren, Pa., have chartered North Maryland Lumber Co. to conduct lumber and mining business with authorized capital of \$5,000,000.

Salisbury—Cannery.—Roberts Bros. of Baltimore, Md., will erect cannery at Salisbury. There will be two buildings, one 100x40 feet and one 90x30 feet. Capacity will be about 35,000 cans per day.

Stony Creek—Amusement Resort.—The Altoona Hotel Co., recently incorporated, will conduct a summer resort and amusement park at Stony Creek; hotel will be enlarged and improved and new attractions added. For particulars address F. Nollenberger, secretary, Baltimore, Md.

Washington, D. C.—Rifle Manufactory.—Ball-Bearing Rifle Co. has been incorporated, with capital stock of \$500,000, for the manufacture of munitions of war, by Orlan C. Cullen, E. D. Cullen, E. W. Anderson, West Steever and others.

Washington, D. C.—Ice Plant.—E. M. & A. B. Willis will build a 50-ton ice plant; contract awarded.

## MISSISSIPPI.

Collins.—Chartered: Holloway & McRaney, with capital of \$50,000, by D. C. McRaney and others.

Dublin—Mercantile.—Chartered: Dublin Mercantile Co., with capital of \$10,000, by J. M. Powers and others.

Greenville—Cotton Company.—Greenville Cotton Co. has been incorporated, with capital of \$20,000, by H. W. Starling, E. H. Maigruder, W. E. Negus and others.

Hazlehurst—Mercantile.—Hubbard & McGrath, with capital of \$50,000, have incorporated. T. J. Hubbard, J. H. and J. W. McGrath are the incorporators.

Laurel—Arm and Pin Factory.—Standard Arm & Pin Co. of Gadsden, Ala., manufacturers of crossarms, pins and brackets for telephone, telegraph and electric-light poles, will establish a branch plant at Laurel with capacity of one carload per day.

Leaf—Land Company.—Leaf Land Co., with capital of \$10,000, has been incorporated by J. H. Thompson, M. J. O'Neill and E. L. Thompson.

Vicksburg—Ice Plant.—Vicksburg Ice Co. will increase capacity of its plant to eighty tons per day.

#### MISSOURI.

Fulton—Ice and Cold-storage Plant.—State Lunatic Asylum No. 1 will install a \$5000 ice and cold-storage plant. James Leach, chief engineer, can give further particulars.

Joplin—Lead and Zinc Mine.—Conqueror Lead & Zinc Co. has been incorporated, with capital stock of \$150,000, by Wm. Hank, A. D. Shockley and G. W. Hauk.

Kansas City—Furnace Company.—President Furnace Co., with capital stock of \$100,000, has been incorporated by John H. Lucas, Mathew A. Foster, Ben. C. Taylor and others.

Kansas City—Mercantile.—Chartered: Fred J. Peifer Furnishing Goods Co., with capital of \$10,000, by Fred J. Peifer and others.

Kansas City—Chartered: Kansas City Wonderland Co., with capital of \$5000, by Wm. J. Keeffe, Louis B. Conell and Geo. W. Van Deman.

Kansas City—Electrical Engineering.—Chartered: Hodge-Walsh Electrical Engineering Co., with capital of \$30,000, by Robert W. Hodge, John E. Walsh and W. H. McKinley.

Kansas City—Ice Plant.—Saloonkeepers' Association and the Butchers and Grocers' Association contemplate organizing an \$85,000 stock company for erecting and operating an ice plant.

Kennett—Planing Mill.—Dillman Planing Mill Co., with capital of \$2000, has been incorporated by M. A. Dillman, L. C. Dillman and A. J. Dillman.

Lebanon—Ice and Cold-storage Plant.—Lebanon Light & Magnetic Water Co. will, it is said, erect a \$35,000 ice and cold-storage plant.

Ozark—Cannery, etc.—Chartered: Fidelity Canning & Manufacturing Co., with capital of \$5000, by S. E. Cope, M. L. Howard and F. R. Pierce.

St. Francis County—Lead Mines.—Southern Mining & Prospecting Co. has been formed at Lewisburg, Tenn., with capital stock of \$250,000, and has options on 5000 acres of land in St. Francis county, where the company will prospect for lead.

St. Joseph—Refrigerating Plant.—Hammond Packing Co. has awarded contract for a 500-ton refrigerating plant with which to equip its new packing-house.

St. Louis—Mining.—Chartered: St. Louis Enon Mining Co., with capital stock of \$240,000, by J. E. Chandler, Chas. F. Wenneker, Geo. H. Blackwelder and others.

St. Louis—Lead Mines.—Queen Elizabeth Lead & Mining Co. has been incorporated, with capital stock of \$100,000, by Chas. H. Lieman, E. F. Neilhaus and L. C. Santens.

St. Louis—Realty Company.—Oxford Place Realty Co. has been incorporated, with capital stock of \$160,000, by Harry B. Gill, Wm. P. Nelson, Lee W. Grant and others.

St. Louis—Hat Company.—Chartered: White-Branch-McConkin-Shelton Hat Co., with capital stock of \$200,000, by R. J. White, L. O. Branch, Wm. N. McConkin and Theodore Shelton.

St. Louis—Shoe Company.—Chartered: Johansen Bros. Shoe Co., with capital stock of \$125,000, by Johan Johansen, John G. Bareson, Fred H. Weber and others.

St. Louis—Oil and Grease Company.—Chartered: Chappell Oil & Grease Co., with capital of \$3000, by S. R. Chappell, A. D. Chappell and D. W. Vayles.

St. Louis—Realty Company.—Evenwood Realty Co. has been incorporated, with capital of \$2000, by John A. Anderson, James C. Jones and others.

St. Louis—Manufacturing.—Wm. A. Hall, Frederick J. Hall and E. Lewis Hall have incorporated William A. Hall Manufacturing Co., with capital of \$5000.

St. Louis—Supply Company.—Chartered: R. J. Leacock Supply Co., with capital of \$10,000, by Robert J. Leacock, Edward B. Holly and Andrew Leacock.

St. Louis—Iron Works.—National Iron Works has been incorporated, with capital of \$10,000, by John F. Hines, Wm. G. Kayser, John Greely and others.

St. Louis—Planing Mill.—Mechanics' Planing Mill Co., with capital stock of \$100,000, has been incorporated by Herman Schulte, C. F. Fischer, John Buck, Henry Kraemer and others.

St. Louis—Ice Plant.—St. Louis Dressed Beef & Provision Co. has awarded contract for installation of a 250-ton refrigerating machine.

#### NORTH CAROLINA.

Asheville—Lumber Company.—Snowbird

Lumber Co. has been incorporated, with capital stock of \$150,000, for dealing in lumber and cattle, by J. L. Rumbarger, F. T. Rumbarger and J. B. Watson of Philadelphia, Pa.; R. R. Rumbarger of Elkins, W. Va., and Buff Merrick of Asheville.

Charlotte—Mercantile.—Chartered: Adams Grain & Provision Co., with capital of \$30,000, by John H. Adams and others.

Elizabeth City—Tray and Basket Factory.—North Carolina Tray & Basket Co. will rebuild its plant at once.\*

Elizabeth City—Real Estate.—M. B. Culpepper, C. W. Griffin, W. T. Old and others have incorporated Culpepper, Griffin, Old & Glice Co., with capital of \$15,000, to conduct real-estate business.

Greensboro—Development Company.—Davie Street Development Co., with capital stock of \$50,000, has been incorporated by H. T. Ham, David White, A. Ramkin and others.

Hickory—Foundry and Machine Shop.—Piedmont Foundry & Machine Co. has organized, with capital of \$10,000, for establishing foundry and machine shops.

Hickory—Telephone Company.—Sunban Telephone Co., with capital stock of \$20,000, has been incorporated by J. A. Martin and J. L. Latta of Hickory, W. R. Abernathy of Newton, N. C., and others, to operate telephone lines in Catawba county.

New Stirling—Tannery.—Bradford & Sons will rebuild their tannery recently burned at a loss of \$4000.

Raleigh—Mattress Factory.—A. E. Jordan and R. E. Prince will establish mattress factory and furniture repair shop.

Reidsville—Telephone Company.—New company has been formed, with capital stock of \$20,000, to purchase and improve Reidsville Telephone Exchange.

Rockingham—Cotton Mill.—Great Falls Manufacturing Co., reported last week, will install steam plant, fire-protection equipment, electric-light system and other improvements; the 4500 spindles will be continued on coarse goods, and it is expected that 3500 will be added in the future and finer goods be produced. Contract for the new apparatus not awarded yet.

Sylva—Tannery.—Chas. J. Harris will establish a tannery and later on kaolin works.

Waynesville—Gold Mines.—Cavenders Creek Gold Mining Co., with capital stock of \$300,000, has been incorporated by Silas A. Jones, J. S. Council, Jacob J. Wild, W. B. Ferguson and others for development of gold mines.

Wilmington—Coal Mines, etc.—W. E. Worth, W. T. Shay, John S. Armstrong, Walker Taylor and George R. French have incorporated the Carolina Company, with capital stock of \$1,000,000, to engage in construction, mining, manufacturing, buying, selling coal, etc.

#### SOUTH CAROLINA.

Clio—Mercantile.—Chartered: J. H. Bennett Co., with capital of \$50,000, by J. H. Bennett and others.

Barnwell.—Chartered: Easterling-Patterson Company, with capital of \$25,000, by J. M. Easterling and others.

Chester—Hardware Company.—Bewley Hardware Co. will increase its capital stock to \$25,000 for extending its business.

Gaffney—Mill-supply Works.—Chartered: Southern Manufacturing & Mill Supply Co., capital \$50,000, by Harry E. Hansen of Gaffney and Thorwald Hansen of Everett, Mass. This company recently completed works for making roving cans, mill boxes, trucks, baskets, etc., used in textile mills.

Johnston—Electric Lighting.—City contemplates having its streets lighted with electricity; power to be furnished by the Johnston Machine Works.

Spartanburg—Soap Factory, etc.—Chickasaw Soap Co. will hold a meeting January 19, to decide increase of capital stock to \$100,000 for the purpose of adding the manufacture and refining of oils, etc., to its business; W. G. Darden, president.

Spartanburg—Textile-machinery Works.—Wetmore Development Co., reported recently, has organized with S. G. Finley, president; S. M. Wetmore, vice-president, and G. R. Rembert, secretary. Company will manufacture a stop-motion for drawing frames in cotton mills.

Union—Foundry.—The foundry lately reported as being established will be operated as Moss & McCraw, instead of as W. M. Morse.

Winnboro—Publishing.—Chartered: News & Herald Co., with capital of \$6000, by J. Frank Foshee, president; W. D. Douglass, vice-president and secretary, and James Q. Davis, treasurer.

#### TENNESSEE.

Bristol—Cigar Factory.—C. H. Branch and E. C. Dunlap have established a cigar factory.

Chattanooga—Steel Furnaces.—It is reported that Joel Hurt of Atlanta, Ga., who owns extensive iron-ore properties near Chattanooga, is interested in a plan to construct two large open-hearth steel furnaces near Chattanooga.

Chattanooga—Cotton Mill.—Chamber of Commerce has a proposition for organization of \$300,000 company to build cotton mill.

Chattanooga—Bottling Works.—Coca Cola Bottling Works has been chartered, with capital of \$4000, by H. O. Ewing, D. F. Thomas, J. F. Johnson and others.

Clarksville—Hardware Company.—Clarksville Hardware Co. has been incorporated, with capital of \$15,000, by J. M. Bowling and others.

Cleveland—Electric-light Plant.—Cleveland Electric Light Co. will install within the next sixty days an alternating dynamo, 120,000 watts, 2200 volts, 60 cycles.

Dyersburg—Electric-light Plant and Water-works.—City will issue bonds for municipal ownership of water-works and electric-light plant. Address "The Mayor."

Memphis—Tailoring.—W. W. Gregg, Robert E. Gregg, C. R. Curtis and others have formed a \$30,000 corporation for conducting general tailoring business.

Milan—Excelsior Factory.—C. F. Wolfe of Nashville, proprietor of Southern Excelsior Co., will establish an excelsior factory at Milan.

Murfreesboro—Ice Plant.—A. G. Tomkins, reported recently to erect an ice and cold-storage plant, has organized the Tomkins Ice & Produce Co. Estimates are being received on a 20-ton plant.

Shelbyville—Water-power Development.—Thomas Lynn and A. A. McCorkle have, it is reported, purchased the mill site, premises and water-power of Hopkins & Yoes (whose flour mills were lately burned), and will develop the water-power electrically for furnishing the town with water.

Wartburg—Coal Mines.—Tennessee Blue Gem Coal Co. has been organized, with capital of \$15,000, by Wm. P. Dagley, Thos. N. Rodes, Aubrey H. Gillingham and others.

#### TEXAS.

Abilene—Mercantile.—Abilene Dry Goods & Grocery Co. has been incorporated, with capital stock of \$100,000, by J. W. Davis, W. H. Craig, A. F. Buteman and others.

Abilene—Brick Works.—Abilene Brick Co., reported recently as incorporated, will establish a steam plant for manufacturing brick, tile, sewer pipe and other clay wares; brick capacity will be 20,000 per day. Address J. L. Stephenson.

Bay City—Rice and Irrigation Company.—B. C. Cabell, L. H. Hughes of Dallas, Texas; R. H. Taylor of Bay City and others have incorporated Trespalacios Rice & Irrigation Co., with capital stock of \$50,000.

Beaumont—Lime, Cement and Brick Works.—W. A. Russell and Horace Myrick have incorporated Myrick Bros. Co., with capital of \$30,000, for manufacture of bricks, cement and lime.

Beaumont—Oil Refinery.—William Davis, representing Wheeling (W. Va.) parties, will make arrangements at El Paso, Texas, for awarding contracts for erection of a large refinery in the Beaumont district.

Beaumont—Oil Refineries.—German-American Oil Co. has decided to increase its capital stock to \$2,000,000, and will erect two oil refineries.

Beaumont—Oil Wells.—John B. Goodhue, R. L. Cox, O. B. Greaves, W. P. H. McFadden and others have incorporated the William Penn Oil Co., with capital stock of \$2,500,000.

Beaumont—Oil Pipe Line.—J. S. Cullinan, formerly of the J. S. Cullinan Co. of Corsicana, Texas, will be associated with the Texas Fuel Co. of Beaumont, recently incorporated with capital stock of \$50,000; company will build at once a six-inch pipe line to Port Arthur. Company's office is in the Exall Building.

Beaumont—Oil Refinery, Machine Shops and Foundry.—George Rush of New York, representing himself and others, has purchased eighty-nine acres of land for \$45,000 as site for oil refinery, machine shops and foundry which it is proposed to build at a cost of \$2,000,000.

Beaumont—Oil Wells.—Harris Oil Co., with capital stock of \$100,000, has been incorporated by Dewey Heywood, Alba Heywood, W. Scott Heywood and others.

Belton—Electric-light and Power Plant.—J. F. Strickland of Waxahachie, Texas, has

been granted franchise for erection of electric-light and power plant at Belton.

Big Sandy—Cannery.—J. W. Quinn, J. Lester Williams and T. J. Sparkman, solicitors for Chicago Building & Manufacturing Co., have closed contract for establishment of a cannery at Big Sandy with capacity of 1000 dozen three-pound cans per day.

Big Springs—Lumber Company.—J. N. Rusling, W. A. Hinds and C. C. Hinds have incorporated Hinds Lumber Co.

Brenham—Oil Pipe Line.—The Red Cross Oil Co. has been chartered, with capital stock of \$250,000, into which will be merged the original Pennington & Mayfield Co., for construction of pipe lines, contracts for which have been awarded. R. E. Pennington is president; R. L. Cox, vice-president; Billy Mayfield, secretary, and W. E. Reichard, architect.

Brownwood—Sewerage.—Hill & Hill of Waco, Texas, have contract at \$5500 for construction of sewerage system.

Buffalo—Mercantile.—Chartered: J. P. Parker Co., with capital of \$10,000, by J. P. Parker and others.

Cleburne—Gas Plant.—Cleburne Water, Ice & Lighting Co. has received franchise for erection of a gas plant.

Collinsville—Grain House.—H. Waldo will replace his burned grain house with a brick structure; will install conveying and cleaning machinery.

Commerce—Mercantile.—Chartered: Commerce Mercantile Co., with capital of \$30,000, by W. J. Taylor and others.

Dallas—Mercantile.—Chartered: S. A. Nance Company, with capital of \$30,000, by S. A. Nance and others.

Dallas—Macaroni Factory.—Carlissi & Tolbi have established macaroni factory at 258 Live Oak street.

Dallas—Mercantile.—Chartered: W. F. Bell Produce Co., with capital of \$2500, by W. F. Bell and others.

Dallas—Mercantile.—Chartered: Jackson Steer Grocery Co., with capital of \$10,000, by Wm. M. Earnest and others.

Dallas—Ice Plant.—Dallas Ice Factory, Light & Power Co. has awarded contract for installation of a 250-ton ice plant.

Dallas—Cotton-gin Foundry.—The Murray Company has increased its capital stock from \$300,000 to \$400,000.

El Paso—Pintsch-gas Plant.—Plant will be established for the manufacture of Pintsch gas, and it is said that J. S. Dixon, representing Pintsch Gas Co. of New York, has completed arrangements for erection of necessary buildings.

El Paso—Wire Factory.—John Ashcroft, 910 Mesa avenue, is in correspondence with Eastern parties relative to establishing a copper-wire factory in El Paso.

Houston—Rice Mill.—Houston Rice Milling Co. has been incorporated, with capital of \$50,000, and will erect large rice mill and warehouse. Bryan Heard is president; De Lancey Evans, vice-president, and Bernard Brown, secretary and treasurer.

Houston—Electrical Company.—Houston Electric Manufacturing Co., with capital stock of \$10,000, has been incorporated to handle electric supplies by H. W. Cortes, T. H. Thompson, T. C. Coping and others.

Houston—Railroad Improvements.—Southern Pacific Railroad Co. will expend \$278,688 in the erection of new buildings and \$149,810 in construction of bridges and culverts during the year; W. G. Van Vleck, manager transportation department.

Houston—Wire-fence Factory.—Addison Barr of Battle Creek, Mich., is reported to establish a plant in Houston to manufacture wire fencing and wire-fence machines.

Houston—Power-houses.—See item in "Machinery Wanted" under subheading of "Power-houses."

Kaufman—Water-works.—City has now on view plans and specifications for the construction of its proposed water-works, and bids will be opened this month. Address Geo. G. Shaw, mayor.\*

Kemp—Mercantile.—Chartered: Kemp Mercantile Co., with capital of \$20,000, by M. D. Rutland and others.

Matagorda—Irrigation Plant.—Messrs. Hughes and Cabel of Dallas, Texas, are interested in the formation of company for constructing system to irrigate 10,000 acres of rice lands at Matagorda.

Midlothian—Grain Elevator.—W. W. Major will rebuild his grain elevator, burned at a loss of \$15,000.

Mt. Pleasant—Electric-light Plant.—M. Greenspun, manager and owner of the Mt. Pleasant Telephone Exchange, contemplates erecting an electric-light plant.\*

Nacogdoches—Oil-burner Factory.—Messrs. Barron & Demory have patented an oil

burner, and will erect a plant for its manufacture.

Nacogdoches—Drug Company.—Chartered: B. T. Shindler Drug Co., with capital of \$20,000, by R. T. Shindler and others.

San Antonio—Texas Hot Sulphur Water Sanitarium Co. has increased capital from \$120,000 to \$150,000.

San Antonio—Roundhouse and Depot.—International & Great Northern Railway Co. will, during the year, include in its many improvements the erection of a \$55,000 depot and \$23,000 roundhouse at San Antonio; L. E. Trice, general superintendent, Palestine, Texas.

Stamford—Cotton-oil Mill.—S. M. Swenson & Sons of New York will erect a cottonseed-oil mill at Stamford.

Wallsburg—Electric Plant, Water-works and Ice Plant.—Texas Oil Land & Investment Co. will build an electric-light plant, as recently reported, of 2300 incandescent lights; will also construct a system of water-works and erect a 25-ton ice plant; O. H. De Lamerton, general manager.\*

Weatherford—Woolen Mill.—Ajax Textile Co. has been organized, with \$50,000 capital, to establish the woolen mill lately reported; G. M. Bowie, president; C. D. Hartnett, secretary, and A. F. Parker, general manager.

Weatherford—Chartered: Standard Bale Wire Buckle Co., with capital of \$25,000, to manufacture wire buckles for cotton ties, by R. H. Felton, G. P. Levy and W. H. Eddie-man.

Wharton—Electric-light Company.—Tom C. Gordon will organize a \$10,000 stock company and apply for franchise for erection of electric-light plant.

#### VIRGINIA.

Berkley—Drug Company.—Chartered: Slaymaker Pharmacy Co., capital \$5000, with A. P. Slaymaker, treasurer, and J. M. Woodside of Norfolk, secretary.

Dendron—Lumber Mills.—Surry Lumber Co. will enlarge its plant, increasing capacity from 125,000 to 250,000 feet of pine lumber per day.

Falls Church—Milling.—West Falls Church Milling Co. has been incorporated, with capital of \$10,000, to conduct milling and feed business, by C. C. Waters of Falls Church, E. B. White of Leesburg, Va.; J. B. Anderson of Fostoria, Va., and others.

Norfolk—Wood-product Factory.—Reynolds Manufacturing Co., with capital of \$50,000, has been incorporated for manufacture of wood products. J. M. Reynolds is president.

Norfolk—Mercantile.—Chartered: M. L. T. Davis Co., with capital stock of \$100,000, by M. L. T. Davis and others.

Norfolk—Bridge.—Norfolk Railway & Light Co. will construct bridge between Norfolk and Berkley if franchise is granted by legislature.

Norfolk—Mantel Factory.—Norfolk Hardware Co., recently incorporated, has increased capital stock from \$5000 to \$10,000. Company will manufacture materials of wood, including wood mantels.

Petersburg—Saw and Planing Mill.—E. M. Field and associates will erect a saw and planing mill.

Richmond—Mining and Milling.—Pittsburg Mining & Milling Co. has increased capital from \$50,000 to \$100,000.

Richmond—Glass Company.—Continental Glass Co. has been incorporated, with capital of \$25,000, for manufacture of glass and glassware. S. B. Dunston is president; C. F. Sauer, treasurer, and J. E. Fowler, secretary.

Richmond—Dental Supply Company.—Owens-Grant Dental Supply Co., with capital of \$25,000; S. P. Owens of Norfolk, president; A. Grant, vice-president, and W. P. Chandler, secretary.

Richmond—Electric Advertising Company.—Electric Advertising Co. has been incorporated, with capital of \$5000, to conduct general advertising business by means of electrical devices. Andrew Pizzini, Jr., is president; William Todd, vice-president; Andrew J. Pizzini, secretary.

Roanoke—Clothing Company.—Airheart-Kirk Clothing Co. has been incorporated, with capital of \$20,000, by A. J. Airheart, president and general manager, and W. E. Airheart, vice-president.

#### WEST VIRGINIA.

Bluefield—Sewerage.—City has decided affirmatively the issuance of \$35,000 for construction of sewerage system. Address "The Mayor."

Cameron—Bakery.—J. Schumacher of Moundsville, W. Va., will establish bakery and residence at Cameron.

Charleston—Coal Mines, Coke Ovens, etc.—United States Steel Corporation (E. H. Gary,

chairman, New York city) has leased from the Pocahontas Coal & Coke Co. and will develop 50,000 acres of coal lands. Extensive mines will be opened, 3000 ovens will be constructed for an annual output of 1,500,000 tons of coke; also will be built mining plants, railways, water-works, etc.

Clarksburg—Town Development.—River-side Development Co. has been organized to build a suburban town on thirty-five acres, manufacture brick and lumber, install electric plant and water-works, by Dr. John B. Smith and others.

Clarksburg—Coal Mines.—Robert E. Umbel of Uniontown, Pa., has purchased 532 acres of coal lands near Clarksburg for \$53,000.

Colfax—Brick Works.—New company will be organized to operate the Colfax Red Brick Works, which have been idle for six months; many improvements will be made. Address Thomas Williams.

Dingess—Coal Mines.—John A. Clark of Fairmont, W. Va., who purchased the plant and holdings of Pearl Coal Co., as lately reported, has organized the Pearl Mining Co., with capital stock of \$35,000.

Grafton—Pump Works.—O. G. Augir has purchased the Grafton Pump Factory, will install new machinery and operate same.

Mannington—Glass Works.—Manning Glass Works Co., previously reported to enlarge its plant for the manufacture of milk jars by erection of an additional building and installation of new machinery, has been incorporated, with capital stock of \$50,000, by V. T. Clayton, H. E. Travis, A. G. Clayton and others.

Maunington—Medicine Factory.—Southern Medicine Co., recently purchased by Caleb Bruce and others, will erect factory for the manufacture of hair restorer.

Mount Hope—Coal Mines, etc.—Chartered: Mount Hope Coal & Coke Co., with capital of \$25,000, by A. P. Bailey, R. F. Bailey, A. M. Brown and others.

Sweet Springs—Stave Mill.—Curran & Lewis contemplate establishing a plant for the manufacture of barrel staves.\*

Wellsburg—Carriage and Coal-car Works.—Mahan & Hamilton have bought 300 acres of land, and will build large carriage and coal-car works; details of the project have not been announced.

Wheeling—Land Improvement.—Wheeling Improvement Co. has commenced work on improvements proposed at Glenn's Run. Streets will be laid out and a complete suburban town developed.

Wheeling—Structural-iron Plant.—A company will, it is reported, be organized, with capital stock of \$140,000, to build and operate a plant for the manufacture of bridge and structural iron. Address the Board of Trade.

#### INDIAN TERRITORY.

Claremore—Hardware Company.—Chartered: Henley Hardware Co., with capital stock of \$6000, by Robert L. Hill, Davis Hill and E. N. Henley.

Eufaula—Mercantile.—Tully Mercantile Co. has been incorporated, with capital of \$100,000, by C. H. Tully and others.

Muscogee—Mining.—Chartered: Mineral Development Co., with capital stock of \$100,000, by R. L. Owens, John Morton and Myrtle Hale.

South McAlester—Mercantile.—Chartered: Head Mercantile Co., with capital of \$12,000, by Truxon Head and others.

South McAlester—Mining.—Tobucksay Mining Co. has been incorporated, with capital stock of \$100,000, by Jeff Truly, L. Hirsch, L. Cohn and others.

#### OKLAHOMA TERRITORY.

Granite—Oil Company.—Red River Oil Co. has been incorporated, with capital stock of \$750,000, by C. H. Myers of Granite, Fred L. Getty of Chicago, Ill.; J. B. Lenertz of Granite and others.

Oklahoma City—Mining.—Cleo Copper Mining Co., with capital of \$25,000, has been incorporated by John E. Mincher, Wiley Brown, W. H. Murphy and others.

Oklahoma City—Realty.—Park Site Realty Co., with capital of \$16,000, has been incorporated by Guy E. Blackwelder and others.

Oklahoma City—Grain Company.—Chartered: J. C. Rabb Grain Co. of Kingfisher and Oklahoma City, O. T., and Chickasha, I. T., with capital stock of \$50,000.

Sayre—Lumber Mills.—Chartered: Western Lumber Co., with capital stock of \$20,000.

Watonga—Ice Company.—Chartered: Watonga Crystal Ice Co., with capital of \$20,000.

#### BURNED.

Auburn, Ala.—J. M. Thomas' cotton gin; estimated loss \$4000.

Clarksburg, W. Va.—Glen Elk brick plant, owned by William Wilkinson and William Thompson; estimated loss \$20,000.

Clifton, Texas.—Earnest & Sanders' cotton gin; loss \$3000.

Duncans, S. C.—W. A. Moore's flour mill; estimated loss \$3500.

Greenville, Texas.—Storage building of American Cotton Co.; estimated loss \$5000.

Haskell, Texas.—Sanders & Earnest's cotton gin; estimated loss \$3500.

Lumber City, Ga.—T. W. Garbutt & Co.'s lumber mill.

Meridian, Miss.—The fertilizer department of the Mississippi Cotton Oil Co.; estimated loss \$37,000.

Nashville, Tenn.—Vendome Theater; estimated loss \$50,000.

Port Tampa City, Fla.—M. J. Castro & Co.'s cigar factory.

Richmond, Va.—Alexander Cameron & Co.'s tobacco factory; estimated loss \$100,000.

Sewanee, Tenn.—Sewanee Steam Laundry; estimated loss \$4500.

Thomasville, N. C.—Climax Chair Co.'s factory; estimated loss \$12,000.

Warrenton, Ga.—B. L. Battle Manufacturing Co.'s knitting mill; loss \$30,000.

#### BUILDING NOTES.

Annapolis, Md.—Hotel.—Wm. A. Larned of New York has purchased site at Annapolis for \$18,000, and will erect a large hotel.

Anniston, Ala.—Building.—Charles Nonnenmacher will erect a two-story building to cost \$10,000.

Atlanta, Ga.—Apartment-house.—J. F. Leary is having plans made for erection of a 10-story apartment-house, of brick and steel, to cost about \$200,000. Address 243 Peachtree street.

Atlanta, Ga.—Theater.—W. R. Gunn is preparing plans for the proposed theater to be erected by R. Coley Anderson, recently reported.

Baltimore, Md.—Store Building.—Frank J. Murphy will erect a six-story fireproof store building on Lexington street, to cost \$100,000.

Baltimore, Md.—Hotel.—Robert A. Taylor, Edward J. Bond, S. Miles Brinkley, Horace Slingluff and others will incorporate the Mt. Royal Hotel Co. for erection of eight-story structure, plans for which have been prepared by Glidden & Myers. E. M. Noel will erect building.

Beaufort, S. C.—Hotel.—Nels Christensen has submitted plans for erection of the proposed \$5000 hotel at Beaufort. Address for particulars Board of Trade.

Beaumont, Texas—Business Building.—H. A. Peristein will erect a three-story brick business building 100x80 feet. J. B. Brechen will superintend.

Belton, Texas—Hotels.—Chartered: Central Company, with capital stock of \$20,000, for establishing hotels, by S. M. Ray, G. W. Cole, Jr., and others.

Birmingham, Ala.—Business Building.—Wood, Dickinson & Co. will erect a four-story business building to cost \$25,000.

Birmingham, Ala.—Dwellings.—Otto Marx as trustee has purchased site at \$18,000, on which he will erect four large dwellings.

Birmingham, Ala.—Labor Temple.—Labor Temple Association has been incorporated, with capital stock of \$20,000, for the erection of temple, by P. H. Moore, W. C. Cunningham, Fred Garris and others.

Birmingham, Ala.—Theater.—J. B. Frost and R. Coley Anderson of Atlanta, Ga., and T. H. Bowles of Milwaukee, Wis., have incorporated Anderson Southern Theatrical Circuit, with capital stock of \$100,000.

Clarksburg, W. Va.—Department Store.—D. W. Jacobs will have plans made for erection of a three-story brick department store 50x190 feet.

Columbia, S. C.—Warehouse.—Union Warehouse Co. has been incorporated, with capital stock of \$100,000, by W. A. Clark, W. C. Childs, W. B. Smith Whaley and others.

Columbus, Ga.—Business Building.—Richard W. Needham has awarded contract for erection of a four-story business building to Barlow Bros.

Denison, Texas—Hotel.—Denison Hotel Co. will receive bids up to January 15 for remodeling building for its proposed hotel, reported recently. Plans can be seen at offices of J. Riley Gordon Co., architect, Dallas; of Burton-Lingo Lumber Co., Fort Worth, and of State National Bank, Denison. Separate proposals will be received for elevators, steam heating, plumbing and electric work; G. L. Blackford, secretary.

El Paso, Texas—Dwellings.—Senator E. T. Turney will erect two-story brick residence

to cost \$15,000; John Dyer, brick residence to cost \$5000; H. R. Wood, \$6000 brick residence; Mrs. Chas. A. Fox, \$4000 brick residence; Rev. John F. Kellogg, \$3000 brick residence; W. R. Slinkard, \$5000 brick residence, and J. M. Fleniken, residence.

El Reno, O. T.—Sanitarium.—Dr. J. A. Hatchett and Dr. H. C. Shutte will erect sanitarium, plans for which are being prepared.

Endfield, N. C.—Store Building.—Dr. A. S. Harrison will erect store building.

Fairmont, W. Va.—Theater.—Nelson & Gallagher will erect a new theater with seating capacity for 1000, after plans prepared by Geo. D. Giffen & Co. Contracts will be awarded shortly.

Galveston, Texas—Depot.—Southern Pacific Railroad Co. will erect two-story brick depot at Galveston 300x60 feet; E. H. Harriman, New York city, president.

Galveston, Texas—Hotel.—Chartered: Grand Hotel Co., with capital stock of \$50,000, by M. Marx, B. Adoue and M. C. Michael.

Houston, Texas—Schools.—Contracts have been awarded A. Heidelberg at \$16,800, R. S. Lane at \$2000, R. S. Lane at \$5926, and to J. Stodtler at \$15,403 for erection of schools.

Huntsville, Ala.—Opera-house.—Herbert Cowell has prepared plans for the proposed \$20,000 opera-house.

Lexington, Va.—Bank Building.—First National Bank has awarded contract to C. W. Hancock & Sons of West Appomattox, Va., for erection of its proposed three-story building.

Louisville, Ky.—Warehouse.—Dodd & Cobb have made plans for brick warehouse for Illinois Glass Co. to cost \$25,000.

Macon, Ga.—Business Building.—Mrs. T. C. Dempsey will erect a four-story business building.

Marion, S. C.—Depot.—Carolina Northern Railroad will build depot at Marion; T. C. McNeely, general superintendent, Lumberton, N. C.

Mineral Wells, Texas—Sanitarium.—Chartered: Mineral Wells Sanitarium Co., with capital of \$25,000, by William O'Brien and F. G. Highsmith.

Nashville, Tenn.—Theater.—Vendome Theater, recently burned at a loss of \$25,000, will be rebuilt.

Navasota, Texas—Residence.—Buck Sangster is erecting a \$10,000 residence.

New Orleans, La.—Hotel.—St. Tammany Health Homes Co., lately reported as incorporated to own and conduct the town of St. Tammany, and to improve same by laying out streets, erecting cottages, hotels, etc., has had plans for its hotel made by Stone Bros.; building will be constructed of brick, with capacity of 200 rooms, and equipped with electric plant, ice plant and all modern improvements; J. P. Adams, secretary.

Norfolk, Va.—Hotel.—Wyatt & Nolting of Baltimore, Md., have prepared plans for erection of a seven-story hotel at Norfolk to be known as "The Buckingham;" steel construction, 115x67 feet, and cost \$150,000.

Oklahoma City, O. T.—Business Building.—Chas. F. Gilpin will erect large business building.

Oklahoma City, O. T.—Business Building.—Curtis Lumber Co. has had plans made for erection of a four-story wholesale building 200x170 feet.

Oklahoma City, O. T.—Business Building.—J. J. Culbertson will erect four-story business building 140x140 feet, equipped with all modern improvements.

Parkersburg, W. Va.—Cottages.—Beechwood Improvement Co. is being organized, with capital of \$50,000, for erection of operatives' dwellings, etc.

Pensacola, Fla.—Hotel.—M. H. Judd of Dixon, Ill., will erect a three-story brick hotel.

Plains, Ga.—Bank Building.—Bank building will be erected. Address W. L. Thomas.

Raleigh, N. C.—Warehouse.—W. S. Forbes & Co. have let contract to E. L. Harris for erection of a \$1000 warehouse.

Richmond, Va.—Warehouse.—E. A. Saunders' Sons Co. is having plans made for erection of warehouse; cold-storage plant and coffee-roasting room will also be added.

Richmond, Va.—Auditorium.—Fritz Sitterding has contract at \$5000 for alterations and improvements to the Auditorium.

Richmond, Va.—Hotel.—Fritz Sitterding has submitted lowest bid (\$135,000) for building second section of 100 rooms for Jefferson Hotel; hotel is being erected in three sections.

Seymour, Texas—School.—Architects are invited to submit estimates January 14 for construction of school building to cost \$19,000. Address H. D. Hockersmith, secretary.

Sheffield, Ala.—Buildings.—J. M. Hughes of Beaver Dam, Pa., has been awarded contract for erection of \$20,000 worth of new buildings at Sheffield.

Tampa, Fla.—Courthouse, etc.—Date of opening bids for erection of United States courthouse, etc., building has been postponed from February 3 to 15; J. K. Taylor, supervising architect, Washington, D. C.

West Point, Va.—Hotels, etc.—Beach Park & Hotel Co. has been incorporated, with capital stock of not less than \$25,000 nor more than \$50,000, to conduct and manage hotel, summer resorts, etc. Geo. C. Gouvernor is president; T. A. Hulcher, vice-president, and G. E. Perkins, treasurer.

Wheeling, W. Va.—Bank Building.—Wm. H. Hearne, 80 South Front street, is having plans made for erection of bank building.

## RAILROAD CONSTRUCTION

### Railways.

Ackerman, Miss.—The citizens of Ackerman are interested in plans to construct two railroad lines through Choctaw county.

Alexandria, La.—It is announced that Messrs. Epple & Hayes have secured additional contracts to grade fourteen miles of the Shreveport & Red River Valley Railroad from Campi north. Work is to begin immediately. P. McIlvried at Shreveport is general manager.

Baltimore, Md.—The Baltimore & Frederick Electric Railway Co., promoting the proposed line between these points, has been incorporated, with \$1,500,000 capital stock. The estimated length of the road is forty-five miles, and it is proposed to build from the western suburbs of Baltimore along the Liberty turnpike. The company includes Frank H. Calloway and James E. Ingram, Jr., of Baltimore.

Batesville, Ark.—Russell Harding, vice-president of the Missouri Pacific Railroad Co., informs the Manufacturers' Record that the extension of the White River Railroad beyond Batesville will be about twenty miles in length, to terminate at phosphate deposits in this section of the State. Mr. Harding may be addressed at St. Louis, Mo.

Blountville, Tenn.—The South & Western Railway Co. has been chartered in Nashville, with \$100,000 capital stock, to build from a point on the North Carolina-Tennessee line to the Virginia-Tennessee line in Sullivan county. The incorporators include Tate L. Earliest of Johnson City, Tenn.

Bluefield, W. Va.—It is stated that a New York syndicate has become interested in a proposed electric line between Bluefield and Welch, a distance of forty-two miles. J. W. Reardon is mentioned as among the promoters.

Brownsville, Tex.—It is reported that Detroit capitalists have become interested in a plan to build a railroad between Corpus Christi and Brownsville, a distance of 165 miles. The business men of Corpus Christi have organized a committee, of which C. C. Heath is chairman, to assist in promoting the enterprise.

Cape Girardeau, Mo.—B. F. Johnston has secured the contract to construct the Cape Girardeau & Northern Railroad, projected between Cape Girardeau and Crystal City, a distance of ninety-six miles. The line will be a branch of the Southern Missouri & Arkansas Railroad. S. B. Coombs at Cape Girardeau is engineer.

Clarksburg, W. Va.—The Clarksburg & Southern Railroad Co. it is reported, has made surveys for a line from Clarksburg to a point in Gilmer county along what is known as Freeman's creek valley.

Clay, W. Va.—The Charleston, Clendennin & Sutton Railroad Co. has completed an extension from Charleston to Otter, and it is understood will build to Sutton during the present year. C. C. Lewis at Charleston is vice-president of the company.

Cleburne, Texas.—Mr. G. A. Human, one of the promoters of the railroad between Cleburne and Fort Worth, writes the Manufacturers' Record that preliminary surveys have been completed, and that contracts for right of way have been made. The road will be about twenty-eight miles in length.

Dothan, Ala.—Grading is in progress upon the Dothan, Hartford & Florida Railroad between Dothan and St. Joseph, Fla., a distance of 135 miles. Several miles of track have also been laid. Among those interested is J. P. Pelham of Dothan.

Florence, S. C.—W. L. Rankin and N. S. Gibson are reported as interested in a railroad which is being surveyed from Florence to a point on the Pee Dee river, an estimated distance of sixty miles.

Graham, Texas.—It is announced that the Chicago, Rock Island & Texas Railroad Co.

is considering an extension of its line from Jacksboro to Graham. The estimated length of the extension is about thirty miles. S. B. Hovey at Fort Worth is vice-president and general superintendent of the company.

Hackley, La.—The latest report concerning the Kentwood & Eastern Railroad is to the effect that it is to be extended from Hackley to Balltown, a distance of twenty-one miles. George Hoskins of Kentwood is chief engineer of the company.

Houston, Texas.—A recent conference of the promoters of the Houston, Brazos & Northern Railroad Co. was held in New York, and it is understood that work may begin within the next two months, as considerable right of way has been secured. The estimated length of the line in Texas is 300 miles. R. N. Hall at Houston is president of the company.

Houston, Texas.—General Manager Leroy Trice of the International & Great Northern Railroad has recently made an examination of the country between Houston and Beaumont. It is understood, with the idea of building an extension of the International & Great Northern between these cities. Mr. Trice may be addressed at Palestine.

Joplin, Mo.—It is reported that the Missouri, Kansas & Texas Railroad Co. will extend its line between Webb City and Joplin at once. S. B. Fisher at St. Louis is chief engineer of the company.

Kansas City, Mo.—A London dispatch states that English capitalists have furnished the necessary capital to insure the building of the Kansas City, Mexico & Orient Railroad in Mexico, and that a contract has been made for the necessary rails to lay 600 miles of the line. A. E. Stilwell is president of the company.

Lawton, Okla.—A charter has been granted to the promoters of the railroad between Lawton and Mt. Scott under the title of the Lawton & Wichita Mountain Railway Co. It is capitalized at \$300,000. Among those interested is L. P. Ross of Lawton and C. W. Parker of Abilene.

Lebanon, Tenn.—The extension of the Tennessee Central Railroad between Lebanon and Nashville has been completed a distance of twenty-one miles. It is announced that surveys are being completed with a view to building an extension from Nashville to Clarksville during the present year. Jere Baxter at Nashville is president of the company.

Lexington, Ky.—The electric railroad under construction between Lexington and Georgetown is to be completed by March 1. Younger Alexander at Brooksville, Ky., is president of the company.

Lincoln, I. T.—H. W. Seaman, president of the Ozark & Cherokee Central Railroad Co., informs the Manufacturers' Record that this line, in operation between Fayetteville and Lincoln, a distance of twenty-one miles, is being completed to Westville. Contracts have been let for a further extension from Westville to Muskogee, I. T., a distance of sixty miles. At Muskogee it will connect with the Shawnee, Oklahoma & Missouri Coal Railway, being built by the Kanefelch Construction Co. of Kansas City, Mo., between Muskogee and Shawnee, Okla., a distance of 101 miles. The latter line will be under the same ownership as the Ozark & Cherokee Central. The entire system will be about 200 miles in length. Mr. Seaman may be addressed at Clinton, Iowa.

Marion, S. C.—Augustus Mellier, president of the Carolina Northern Railroad Co., writes the Manufacturers' Record that surveys are being made for an extension of this line south from Marion, S. C., the present terminus. It is stated that contracts for construction will probably be let in about two months. Mr. Mellier may be addressed at 316 Bourne Building, Philadelphia.

Maryville, Ia.—A. M. Bannister of Detroit, Mich., is interested in the Louisiana Midland Railroad, being promoted from Monroe to Beaumont, Texas. Surveys have been completed between Monroe and Natchitoches.

Montgomery, Ala.—W. W. Summerlin, mayor of Tallapoosa, is interested in a project to build a railroad between Tallapoosa and Montgomery, an estimated distance of 135 miles. A company has been formed with George O. Vanderbilt of Princeton, N. J., as president; William H. Martin of Frenchtown, N. J., vice-president, and Mr. Summerlin as general manager. The directors include Mr. Martin, who is president of the Union National Bank of Frenchtown, and A. B. Haring, cashier of the same institution.

Morgan City, La.—Surveys are being made in the interest of a railroad between Morgan City and Luling, Texas, by way of Houma. A. Corbin is engineer.

New Orleans, La.—A. M. Humphries is interested in a plan to build a railroad be-

tween New Orleans and Morgan City, an estimated distance of seventy miles. A company called the New Orleans Southwestern Railroad Co. has been organized to take up the project.

Oklahoma City, Okla.—G. W. Baumhoff of St. Louis is interested in constructing the proposed electric railroad in Oklahoma City and suburbs, and is also president of the Oklahoma City & Canadian Railway Co., which proposes building through a portion of the Territory.

Orange, Texas.—John W. Maxey, assistant to the president, writes the Manufacturers' Record that an extension of the Orange & Northwestern road five miles in length is to be built to South Orange, and a northern extension from Buna to Marshall. It is further proposed to extend it from Buna to Corsicana, and surveys are to be made immediately with a view of letting contracts within the next three months. The extensions will aggregate 325 miles. Mr. Maxey may be addressed at Houston, Texas.

Paris, Texas.—W. J. Kirkpatrick of Cleveland, Ohio, is reported as interested in a plan to build an electric railroad between Paris and the town of Blossom, Texas; also between Terrell and Kaufman.

Princeton, Ark.—The Wisconsin & Arkansas Lumber Co. is constructing a railroad which will terminate at a point near Princeton, and will be fifteen miles in length.

Reidsville, N. C.—The report that the Southern Railway Co. may construct a branch between Reidsville and Kernersville to shorten its route between Washington and Atlanta has been revived. The estimated distance is forty miles. W. H. Wells at Washington is engineer.

Roanoke, Va.—Z. T. Kale of Newcastle, Va., is reported as interested in a plan to build a railroad between Roanoke and Newcastle through a portion of the Catawba valley.

San Antonio, Texas.—Surveys have practically been completed for the proposed extension of the St. Louis & San Francisco system between San Antonio and Brownwood, Texas. B. F. Yoakum at St. Louis is president of the company.

San Augustine, Texas.—C. F. W. Felt of Galveston, chief engineer of the Gulf, Colorado & Santa Fe Railway Co., informs the Manufacturers' Record that the Old Colony Contracting Co. has received the contract for the completion of this line to San Augustine, and that all of the necessary material has been arranged for.

Seguin, Texas.—The Seguin & Southwestern Railroad Co. has been chartered in Texas to build a railroad from Seguin to some point between New Braunfels and San Marcos, connection to be made with the International & Great Northern or the Missouri, Kansas & Texas. The company is capitalized at \$100,000. Among those interested are C. E. Tips and T. H. Baker of Seguin.

Shawnee, Okla.—It is announced that the work of grading the extension of the Atchison, Topeka & Santa Fe system from Riplley to Shawnee has begun with a view to completing it by July 1. C. F. W. Felt at Galveston, Texas, is engineer.

Sherman, Texas.—The Denison & Northern Railroad project, it is stated, has been revived by a company which includes L. K. Stone of Joplin, Mo., and J. D. Junkins of Philadelphia. It is proposed to build from Sherman to a point near Coalgate, I. T.

Sistersville, W. Va.—It is reported that another plan is under way to build a railroad from Sistersville to a point in Ohio, bridging the Ohio river. The proposed western terminus is Toledo.

Tuscaloosa, Ala.—Woolsey Finell of Tuscaloosa has been appointed engineer to survey the proposed Mobile & West Alabama Railroad between Tuscaloosa and Florence, a distance of 120 miles.

Valdosta, Ga.—Final surveys are being made for the extension of the Atlantic, Valdosta & Western Railroad between Valdosta and Albany, Ga. F. W. Long at Jacksonville is chief engineer.

Waxahachie, Texas.—A correspondent of the Manufacturers' Record writes that an application for a franchise to construct the proposed electric railroad between Waxahachie and Ennis has been filed with the city council. The road, if constructed, will be about fifteen miles in length.

West Point, Miss.—The West Point & Houston Railroad Co. has been incorporated to construct a road through Clay and Chickasaw counties. The incorporators include R. C. Beckett and N. W. Bradford.

### Street Railways.

Atlanta, Ga.—The residents of Westwood Park are conferring with the Atlanta Railway & Power Co. with the view to securing

an extension of its trolley system to the suburb referred to.

Birmingham, Ala.—It is reported that the Birmingham Railway, Light & Power Co. has determined to expend an additional sum for extensions and improvements besides the amount already appropriated. The total outlay is estimated at \$1,500,000. Robert Jemison is president of the company.

Winchester, Ky.—E. S. Jouett, president of the Winchester Railway, Light & Ice Co., informs the Manufacturers' Record that the present street-car system will be rebuilt for the use of trolley motors. The company has purchased the present railway, also the electric-light plant, which will be rebuilt. The company is capitalized at \$100,000.

## Machinery, Proposals and Supplies Wanted.

Manufacturers and others in need of machinery of any kind are requested to consult our advertising columns, and if they cannot find just what they wish, if they will send us particulars as to the kind of machinery needed we will make their wants known free of cost, and in this way secure the attention of machinery manufacturers throughout the country. The MANUFACTURERS' RECORD has received during the week the following particulars as to machinery that is wanted.

Boiler.—Hercules Gold & Copper Co., Cld., N. C., is in the market for 100-horse-power boiler, new or second-hand.

Boiler and Engine.—See "Saw-mill."

Boilers and Engines.—Kentucky Flu-Spar Mining & Milling Co., Paducah, Ky., is in the market for crushers, engines, boilers, etc. Address care of Bloomingfield & Co.

Boilers and Engines.—Box 440, Middleport, Ohio, wants Corliss engine from 150 to 200 horse-power, 18x24-inch common slide-valve engine, and battery of two boilers (with no stack) 54x16 inches, with six-inch flues riveted in heads.

Bridge.—Specifications and bids for construction of steel and wood bridge across Colorado river will be received until January 21. For particulars address Jesse Matthews, county judge, Bay City, Texas.

Canal Construction.—See "Grading Work."

Coffin Machinery.—See "Woodworking Machinery."

Cotton Mill.—See "Textile Machinery."

Cotton-oil Mill.—Planters' Cotton Oil Works, Clarksdale, Miss., will award contract January 15 for furnishing machinery for four-press cottonseed-oil mill; specifications furnished to bidders. Address Chas. L. Wortham, manager.

Crushers.—See "Boilers and Engines."

Diving Apparatus.—J. S. Cock of Christiania, Norway, wants addresses of manufacturers of diving apparatus.

Electrical Work.—R. M. Love, State comptroller, Austin, Texas, will open bids January 25 for plumbing and electrical work on State epileptic colony being built at Abilene. Plans and specifications with J. L. O'Connor, architect, Austin.

Electrical Work.—See "Building Note" of hotel at Denison, Texas.

Electric Lighting.—City of New Orleans, La., will open bids March 24 for constructing system for lighting the public highways by electricity and operating the same for ten years. A deposit of \$25,000 with the city treasurer will be required. W. J. Hardee, city engineer, can be addressed for blank forms of proposals, specifications, etc.

Electric-light Plant.—M. Greenspun, manager of the Mt. Pleasant (Texas) Telephone Exchange, wants to correspond with manufacturers of electric-light plant machinery.

Electric-light Plant, etc.—Texas Oil Land & Investment Co., O. H. De Lamort, president and general manager, Wallisville, Texas, wants exact bids on 2300-incandescent-light plant, water-works machinery, 25-ton ice plant and saw-mill machinery; company wants at once lowest sealed confidential prices for cash.

Electric-light Plants.—C. P. Chenault, secretary People's Electric Light & Power Co., Frankfort, Ky., wants estimates on plant to furnish 400 incandescent and twelve arc lights, latter for street lighting; also on plant to furnish 3000 incandescent and 120 arc lights for street lighting.

Elevator.—See "Heating and Lighting Apparatus."

Elevators.—See "Building Note" of hotel at Denison, Texas.

Engine.—See "Tobacco Machinery."

Engines.—See "Grist Mills."

Foundry Equipment.—See "Machine Tools."

Grading Contracts.—John W. Maxcy, consulting engineer, 204 Binz Building, Houston, Texas, will open bids January 16 for constructing canal levees at a point five miles from railroad station thirty miles from Houston; approximate quantity 200,000 cubic yards, all borrow and waste; forms of proposals, profiles, specifications, etc., at engineer's office; \$1000 check must accompany each bid.

Grading Work.—W. S. Millikin, chief engineer, 609 Travis street, Houston, Texas, will open bids January 7 for constructing canal and levees three miles from Duke, Texas; about 350,000 cubic yards, all borrow and waste; forms of proposals, profiles, etc., on view; \$1000 check must accompany each bid.

Grinding Mill.—See "Spice Mills."

Grist Mills.—J. C. Hutchins, Pensacola, N. C., wants catalogues and prices of steam engines and grist mills.

Heating.—See "Building Note" of hotel at Denison, Texas.

Heating and Lighting Apparatus.—Wood, Dickerson & Co., Birmingham, Ala., want information regarding best mode of heating and lighting store building, also of operating elevator.

Horseshoes.—See "Vehicle Materials."

Ice Plant.—See "Electric-light Plant, etc."

Ice Plants.—C. P. Chenault, secretary People's Electric Light & Power Co., Frankfort, Ky., wants probable cost of ice plant, one to twenty-five tons per day.

Kilns.—See "Lime-kilns."

Kitchen Equipment.—J. G. Wilbraham, proprietor Hotel Monroe, Portsmouth, Va., will be in need of dishwashing machine and other equipment for hotel kitchen.

Lime-kilns.—Carroll & Co., lessees, Gaffney, S. C., want plans and specifications for modern perpetual lime-kilns and constructor for same.

Machine Shop.—E. P. Armstrong, Dew Drop, Pa., wants addresses of shops equipped to drill, tap and mill out blocks of annealed tool steel two and one-quarter inches diameter and two inches long, in lots of six or more at a time; also for making headless steel screws five-eighths inch, ten threads, for steel that can be hardened on the end; should be tool steel.

Machine Tools.—Heywood Bros. & Dobbins, Jennings, La., are in need of a gang or multiple drill for drilling well castings, and a pipe-threading machine.

Machine Tools.—G. T. Glasscock & Sons, Greensboro, N. C., want prices on a universal milling machine, 16-inch shaper, keyseater and bolt machine.

Machine Tools.—J. F. Denihan, 450 Hamilton avenue, Brooklyn, N. Y., wants 30-inch lathe, short bed (dealers' prices).

Mining Equipment.—Oliver Coal Co., Oliver Springs, Tenn., wants estimates on hauling plant (rope, electric or gasoline).

Plumbing Work.—See "Electrical Work."

Powder-houses.—John W. Maxcy, 205 Binz Building, Houston, Texas, will open bids 16th inst. for construction of pile foundations, bulkheads, flumes, concrete or brick masonry work, and for two power-houses; forms of proposal, plans, etc., on view; \$500 check asked with bid.

Pumping Plant.—John W. Maxcy, 204 Binz Building, Houston, Texas, will open bids January 16 for delivery and erection of rice irrigation power pumping plant about five miles from Houston; plant to lift 70,000 gallons of water per minute through two lifts of forty-two feet each; \$500 check will be required with bid; proposal forms, plans, etc., on view.

Railway Equipment.—See "Vehicle Materials."

Roofing.—G. W. Hood and N. L. Burgess, contractors, Gadsden, Ala., want prices on a quantity of (Old Dominion roofing) three-ply wood.

Sandpaper, Belting, etc.—Ready Doctor Medicine Co., Eufaula, Ala., wants names of firms who deal in sandpaper, sand belting and sand, also the glue preparation for making sand belting.

Saw-mill.—J. A. Netherby, Glen Mary, Tenn., wants to buy 20 to 25-horse-power engine and boiler, saw-mill and planer.

Saw-mill Machinery.—See "Electric-light Plant, etc."

Spice Mills.—R. W. Carr, 621 Howard street, San Antonio, Texas, wants machinery for grinding the Mexican chillie pepper.

Stave Machinery.—Curran & Lewis, Sweet Springs, W. Va., want addresses of manu-

facturers of barrel-stave machinery; also addresses of dealers in staves.

Steam Supplies.—See "Vehicle Materials."

Steel Beams.—McDonald Bros., Pleasant Hill, Mo., want 100 steel I beams, five inches and six inches, standard weight, cut to length of twelve feet eight inches.

Telephone Equipment.—W. J. Dunlap, Tallapoosa, Ga., wants prices on 50 or 100 'phones and supplies complete.

Textile Machinery.—W. J. Satterfield, 173 South Forsyth street, Atlanta, Ga., wants addresses of manufacturers of machines for making comforts or bed covers; also addresses of manufacturers of comforts and bed covers.

Tobacco Machinery.—Hopkinsville Tobacco Manufacturing Co., Hopkinsville, Ky., will need automatic machine for handling dipped filler, capacity about 2000 pounds per day; smoking tobacco granulator and cleaner, capacity 4000 pounds per day; smoking tobacco packer, capacity 500 pounds per day; 20-horse-power engine.

Vehicle Materials.—W. R. Stroup, Statesville, N. C., will need large quantity of horse-shoe and carriage materials.

Vehicle Materials.—S. Laub, 36 Classengade, Copenhagen, Denmark, wants addresses of American manufacturers of wheels, wheel parts, etc., for carriages and other vehicles; also of wrought tubing, steel rails and steam valves.

Water-works.—See "Electric-light Plant, etc."

Water-works.—Geo. G. Shaw, mayor, Kaufman, Texas, will open bids January 20 for construction of water-works after plans and specifications now on view. Work to include earth dam and reservoir, pumping station and pumping machinery, furnishing and laying of about 7000 feet of eight-inch force main, and steel tower.

Well-boring.—Sam W. Wilkes, Fulton Club, Atlanta, Ga., wants estimates on boring an oil well from 1000 to 2000 feet deep; also wants to know best method of boring where there is a large amount of water to contend with.

Wire Springs.—W. J. Dunlap, Tallapoosa, Ga., wants prices on coil wire springs for hay presses.

Woodworking Machinery.—See "Stave Machinery."

Woodworking Machinery.—Jas. Davis, Glen Mary, Tenn., wants to buy new or second-hand pony saw-mill.

Woodworking Machinery.—Geo. H. Cooper, Louisville, N. C., wants to purchase coffin machinery (no power needed).

Woodworking Machinery.—Brunswick (Ga.) Sash & Door Co. is in the market for dowel machinery; also wants prices on diagonal planer and sander, new or second-hand.

Woodworking Machinery.—North Carolina Tray & Basket Co., Elizabeth City, N. C., wants bids on second-hand cut-off tables, head saws, basket bottom cutter, pulleys and belting, automatic grinder, drag saw, and bolter.

Woodworking Machinery.—North Carolina Tray & Basket Co., Elizabeth City, N. C., is in the market for second-hand planer fourteen inches, resaw, 50-inch automatic guider, double edger, cut-off tables, post-boring machine for wood, drag saw, etc.

## TRADE NOTES.

Quality Always Tells.—The work of the Nolley Illustrating Co. of Baltimore has been pronounced by experts to be of a very superior character, and the company well deserves the success which it has already achieved. It has been compelled to secure new quarters at 311 East Baltimore street in order to obtain the necessary facilities for its rapidly-increasing business. It is in a position to execute orders for anything in the advertising line from a show card to an elaborate catalogue.

An Enjoyable Occasion.—The annual banquets given by the H. Mueller Manufacturing Co. of Decatur, Ill., to employees are always occasions of unusual enjoyment, and the last one was no exception to the rule. The Decatur Herald in a lengthy article upon the affair referred to the remarkable prosperity of the company and its growth from a very small beginning into one of the most important plants in the West. No less than 275 people are now given employment in the manufacture of water and gas apparatus, plumbers' goods and other specialties for which this company is noted.

Crowded With Business.—Such appears to be the condition of the Ulter Manufacturing Co. of Milwaukee, Wis., judging by some of the orders which it has recently been fortunate in securing. They include fifteen refrig-

erating machines ranging from ten to 150 tons capacity for the Ruemmler Manufacturing Co. of St. Louis; a 50-ton ice plant and two refrigerating machines for the Charters Valley Brewing Co. of Carnegie, Pa.; a 40-ton ice plant and a 40-ton refrigerating plant for the Kansas Ice & Storage Co. of Salina, Kan.; a 320-ton refrigerating machine for the Hamm Brewing Co. of St. Paul, Minn.; a 125-ton ammonia condenser for the Pittsburgh Brewing Co.; a 100-ton refrigerating machine for Goenner & Co. of Johnstown, Pa., and four refrigerating machines of 100 and 200 tons capacity for plants in New York. Other orders are for engines, piping and other apparatus from practically all parts of the country.

Steam Ice Machine Co. will be pleased to send the catalogue if addressed at Bridgeport, Conn.

Industrial Railways.—A catalogue relative to industrial railways recently issued by the Hoshor-Platt Company of No. 15 Cortlandt street, New York, is of more than ordinary interest. The publication referred to describes the various forms of railways suitable for factory yards and buildings, as well as the rolling stock which can be employed. The company supplies all of the material from the turntable to the locomotive, and manufacturers contemplating a transportation system would do well to write for the catalogue before deciding.

Perfect Power Transmission.—This is a problem upon which engineers have labored for many years, and the result is the introduction of a variety of gears. The Renold silent chain gear introduced by the Link-Belt Engineering Co. of Nicetown, Philadelphia, has attracted much favorable comment on account of its superior performance in connection with electrical and steam machinery, as well as general machine-shop practice. A pamphlet recently issued by the Link-Belt Company clearly illustrates and describes its combination of advantages.

Conveying Machinery.—The transfer of finished product and raw material is a problem which is always interesting, as its expense may make such a difference in the profits of a business. The belt-conveying machinery manufactured by the Robins Conveying Belt Co., Park Row Building, New York, is noted not only for its simplicity and economy in operation, but for the extensive variety of uses to which it can be put. A catalogue recently published by the company gives an excellent idea of its service, as it is profusely illustrated with unusually interesting engravings showing the Robins conveyors in use in mining operations, in connection with manufacturing of various kinds, dredging, stamp mills, gas works and in the transfer of coal, coke, sand, refuse and other material. The catalogue is one of the most attractive which has yet been published by this concern, and will be of special interest to engineers and others who realize the value of such apparatus.

A Handy Memorandum.—The Cypress Lumber Co. of Apalachicola, Fla., has recently published some advertising literature which contains valuable information. Especially might be mentioned its booklet entitled "What to Order," which gives practical information relative to the specifications required in various kinds of woodwork.

Covers Everything.—The claim made by the Trinidad Asphalt Manufacturing Co. of 32 Broadway, New York, that it covers everything is well sustained, for its products not only go over the top of things, but over the ground as well. Consequently, the representation of the gigantic umbrella contained on its calendar for 1902 is very appropriate.

Edison-Lalande.—This title is well known in connection with electric batteries for gas engines, fan motors, medical use and other purposes. They have the advantage of being economical and reliable. The Electrical Material Co., 221 North Calvert street, Baltimore, has recently published a pamphlet illustrating and describing the various types.

Nothing Small About It.—The calendar for 1902 sent to its patrons and friends by the Virginia Bridge & Iron Co. of Roanoke is no small affair. It is large enough for the figures to be seen at a distance of twenty or twenty-five feet, and for this reason will be appreciated in offices and counting-rooms. It is printed in patriotic colors, red and blue on white background.

Heaters.—Catalogue No. 135 issued by the American Blower Co. of Detroit has this significant word for the title. The hot-blast apparatus manufactured by the company referred to seems almost too well known to require description, but anyone needing additional information will find it given clearly and concisely, while the illustrations, which relate to the A. B. C. hot-blast heaters, are of a high order.

An Appropriate Announcement.—In wishing its friends and patrons the best wishes for the new year, the McMillan Bros. Co. of Mobile, Ala., has sent out a circular illustrating and describing its turpentine stills, which have an extensive reputation in the South. The company makes a specialty of heavy copper work, and has branches at Fayetteville, N. C.; Savannah, Ga., and Jacksonville, Fla.

A Work of Art.—The calendar issued by the Means & Fulton Iron Works of Birmingham, Ala., is really a work of art. It is illustrated with a reproduction of a painting by Mr. W. T. Spence representing an Indian girl. The coloring is of a high order of excellence, and the title, "The Nation's Ward," is very appropriate. The publishers are to be congratulated upon having selected such an artistic and appropriate illustration.

A Second Edition.—Such has been the demand for information relative to the Singer automatic ice machine that the company has been compelled to publish a second edition of its catalogue describing the small machines. They are especially desirable for hotels, apartment-houses, hospitals, where refrigeration is needed equal to that produced by twenty-five tons of ice or less daily. The Singer apparatus has been highly recommended by experts. The Singer Auto-

## FINANCIAL NEWS.

The Manufacturers' Record invites information about Southern financial matters, items of news about new institutions, dividends declared, securities to be issued, openings for new banks, and general discussions of financial subjects bearing upon Southern matters.

## BALTIMORE'S SAVINGS BANKS.

## Thrift and Prosperity of the City Reflected by Their Condition.

The condition of the savings institutions in a community is an excellent indication of its prosperity, as well as the habits of its people. The savings banks of Baltimore reflect the prosperity of the city to a remarkable extent, and have afforded an opportunity to encourage thrift. While conducted from purely business motives, the benefit of such institutions is so apparent that it need only be referred to. The soundness of the savings banks in this city has done much to contribute to its reputation as one of the wealthiest communities in the United States; consequently the annual reports of the various institutions are of unusual interest, as they indicate any financial changes for better or worse.

The statements of the principal savings banks, detailed in another column, emphasize the fact that the year 1901 has been very prosperous, for every institution not only exhibits an increase in its receipts, but an increase in the number of its depositors. A very gratifying feature is the reports of the various examining committees, all of whom are of the opinion that the investments of the several banks have been carefully and conservatively made in mortgages, bonds and other securities of the most approved character. This indicates that the various corporations are ably and judiciously managed. It might be stated that the books of each bank have been investigated by a committee of prominent citizens not interested in its affairs. The Provident Savings Bank has had its accounts examined by the well-known firm of Lybrand, Ross Bros. & Montgomery of Philadelphia, public accountants and auditors, who have verified all of the statistics reported.

Some figures taken from the various reports, which are published in full elsewhere, are of unusual interest. The Metropolitan Savings Bank shows that over 5000 accounts are open at present, a gain of nearly 20 per cent. during the past year. Its dividends from investments and interest on loans amounted to \$183,000. The Central Savings Bank opened 2410 accounts during the year, and had funds on hand December 21 amounting to \$6,912,000. The German Savings Bank at present has nearly 6000 patrons. The Savings Bank of Baltimore, which is one of the largest in the United States, continues to progress, as is indicated by the fact that it has over 50,000 open accounts at present, 6734 new accounts being opened during the year. The amount of funds on deposit December 31 was no less than \$23,602,000. The enterprise of the Provident Savings Bank, which has branches located in convenient portions of the city and suburbs, is evidently appreciated, as it now has over 28,000 open accounts, an increase of more than 2000 within the year.

Altogether, the several reports of the institutions are well worth studying, as each represents not only a successful business enterprise, but indicates the general tendency of the people towards economy and thrift, as already stated.

## New Banks in the South.

Statistics relative to the number of banks organized in the United States in 1901 make a very favorable showing in

the South. According to the table, banks began business in the Southern States as follows:

	National banks.	Other banks.
Alabama	8	19
Arkansas	4	26
Florida	3	6
Georgia	10	39
Kentucky	7	34
Louisiana	7	22
Maryland	8	1
Mississippi	4	21
North Carolina	5	24
South Carolina	1	17
Tennessee	6	19
Texas	34	34
Virginia	10	19
West Virginia	7	16

It might be added that no less than thirty-six national and ninety-five State banks were organized in Oklahoma Territory, and twenty-six national and forty State banks in Indian Territory, which will give an idea of the rapid expansion of business in this section. Texas heads the record in the United States in the organization of national banks, having nineteen more to its credit than Pennsylvania, which represented the next largest number. The remarkably large number of national banks chartered shows the effect of the legislation allowing institutions of this class to be organized with a capital stock of \$25,000 and over.

## New Corporations.

Messrs. Geo. L. Barnes & Co. have opened a banking-house at Girardeau, Mo.

W. H. Hearne is reported as interested in a bank to be opened at West Liberty, W. Va.

The Citizens' Bank & Trust Co. has been incorporated at Coalgate, I. T., by Boone Williams and others.

The Bank of Licking has been organized at Licking, Mo., capitalized at \$10,000, by J. A. Craven and others.

Boone Williams and others have formed the Citizens' Banking & Trust Co. to do business at Coalgate, I. T.

J. F. Holden and H. H. Meyers are interested in the Mercantile Trust Co., recently organized at Little Rock, Ark.

The business men of Knoxville, Tenn., are considering the organization of another fire insurance company in that city.

Judson T. Cull and others have formed the Home Title & Insurance Co. at Washington. It is to be capitalized at \$100,000.

The Rozier Investment Co., organized at St. Louis, Mo., with \$200,000 capital stock, includes H. L. and W. H. Rozier.

Z. W. Ewing is president, and N. A. Crockett, cashier, of the national bank organized at Pulaski, Tenn., with \$50,000 capital stock.

The Finance Company of America has been organized at Knoxville, Tenn., with \$100,000 capital stock, by William T. Lang and others.

C. L. Fist of Muskogee, I. T., is interested in the Fist-Meagher-Marshall Loan & Real Estate Co., recently organized with \$5000 capital stock.

R. P. Brooks of Forsythe and J. C. Wright of Roanoke, Ga., are interested in a bank recently organized at Roanoke with \$50,000 capital stock.

O. P. Amacker has been elected president, and W. C. Kent, vice-president, of the bank recently organized at Kentwood, La., with \$25,000 capital stock.

The Bank of Warren, Ark., recently incorporated, will be capitalized at \$25,000. W. T. Thompson has been elected president, and H. G. Martin, cashier.

The Bank of Hollandale, recently organized at Hollandale, Miss., is capitalized at \$50,000. Among those interested are C. W. King and R. W. Millsaps.

H. F. Goodnight is president, and E. C. Lewis, cashier, of the Van Zandt County National Bank, which has been organized to do business at Wills Point, Texas.

The application of James F. Craig and others to organize a national bank at Haileyville, I. T., with \$25,000 capital

stock has been approved by the government.

The Bank of St. Genevieve is the title of the new institution at St. Genevieve, Mo., incorporated with \$10,000 capital stock by Robert A. Smith and others.

R. H. Hardaway has been elected president, and N. L. North, cashier, of the Coweta National Bank, recently organized at Newnan, Ga., with \$50,000 capital stock.

C. H. Simmons has been elected president, and J. W. Gilliam, treasurer, of the Savings, Deposit & Trust Co., organized at Hillsboro, Texas, with \$50,000 capital stock.

Arrangements have been made to organize the Gadsden National Bank at Gadsden, Ala., with \$50,000 capital stock. Among those interested is George D. Lancaster.

W. T. Thompson has been elected president; S. B. Meeks, vice-president, and H. B. Martin, cashier, of the bank recently organized at Warren, Ark., with \$25,000 capital stock.

Another trust company has been organized at St. Louis under the title of the American Central Trust Co., with \$1,000,000 capital stock, by William S. Simpson and others.

W. R. Thompson of Fort Worth, Texas, has been elected president of the Alvord National Bank, which has been organized to begin business at Alvord, Texas, with \$25,000 capital stock.

Authority has been given the First National Bank at Blum, Texas, to begin business with \$25,000 capital stock. D. E. Waggoner has been elected president, and W. A. Wells, cashier.

A commission has been issued to the Southern Life & Savings Insurance Co. of Greenville, S. C., to begin business with \$500,000 capital stock. B. A. Morgan of Greenville is one of the directors.

## New Securities.

The Parksley Bank at Onancock, Va., has decided to increase its capital stock from \$25,000 to \$60,000.

The Atlanta Ice Co. has given a mortgage to secure an issue of \$25,000 in bonds for various purposes.

The Merchants' Bank of Nashville, Tenn., has decided to increase its capital stock from \$100,000 to \$200,000.

The city of Palatka, Fla., will probably issue \$75,000 in 5 per cent. improvement bonds. The mayor will give further particulars.

The issue of \$130,000 in bonds of Greensboro, N. C., remains unsold, and will probably be again offered investors in the near future.

The Citizens' Bank of Mountain City, Tenn., has increased its capital stock from \$20,000 to \$50,000 and changed its title to the Merchants and Traders' Bank.

The St. Charles Street Railway Co. of New Orleans has given a mortgage of \$600,000 to John McCloskey to secure a bond issue of this amount, bearing interest at 4 per cent. The issue is a portion of the financial plan to complete the extensions now being constructed by the company.

## Financial Notes.

The First National Bank at Austin, Texas, has reopened for business, with John H. Kirby as president.

It is announced that R. Waverly Smith of Galveston has secured a controlling interest in the First National Bank of that city, paying \$150,000 for 1501 shares of its stock.

The Lewis Banking Co. has made arrangements to begin business at Monte-zuma, Ga., under a State charter. E. B. Lewis is a member of the company, which is capitalized at \$100,000.

## TABLE OF CONTENTS.

EDITORIAL:	Page.
A Call to Carolina.....	421
The South and Self-Reliance.....	421
The Drift of Negroes.....	421
Fooling with Figures.....	422

Will Welcome Industries.....	422
The Charleston Exposition.....	422
Around Mineral City.....	422
Big Coal and Coke Operations.....	422
West Virginia's Glass Industry.....	422
Gas in the Great Kanawha Valley.....	422
West Virginia Oil.....	422
Huntsville Looking Forward.....	422
Opportunities at Gadsden.....	422
To Help Manufacturers.....	422
A Tribute to the Trackwalker.....	422
Now Is the Time to Act.....	423
Practical Education Needed.....	423
Industrial Training in Texas.....	423
Shipbuilding for New Orleans.....	423
Two More Elevators.....	424

RAILROADS:	Page.
New Southwestern Line.....	424
New Line to the Gulf.....	424
Demand for Rolling Stock.....	425
Millions for Improvements.....	425
Another Alabama Project.....	425
Suffolk & Carolina.....	425
To Build in Mexico.....	425
To the Tennessee Copper District.....	425
Railroads Notes.....	425
Galveston and London.....	425

TEXTILES:	Page.
New England Cotton Manufacturers.....	425
Shepperson's Cotton Facts.....	425
A \$500,000 Plant Progressing.....	425
Great Falls Company's Betterments.....	425
Spartaburg County Mill Dividends.....	425
A \$50,000 Woolen Mill.....	425
The Cotton Movement.....	425
Textile Notes.....	425

COTTONSEED OIL:	Page.
Cottonseed-Oil Notes.....	425

LUMBER:	Page.
Lumber Market Reviews:	
Baltimore .....	427
Norfolk .....	427
Savannah .....	427
Mobile .....	427
Jacksonville .....	427
Lumber Notes .....	427

PHOSPHATES:	Page.
Phosphate Markets.....	425
Phosphate and Fertilizer Notes.....	425
MECHANICAL:	Page.
Victor Motor Lathe (Illus.).....	425
Atlas Tube Cleaner (Illus.).....	425
Where the Bowsher Feed Mills Are Made (Illus.).....	425
The Sterling Forge Systems (Illus.).....	425
Improved Medium Surface (Illus.).....	425
New Six-Inch Outside Molder (Illus.).....	425
Trade Literature.....	425

CONSTRUCTION DEPARTMENT:	Page.
New Enterprises.....	421
Building Notes.....	423
Railroad Construction.....	424
Machinery Wanted.....	424
Trade Literature.....	425

FINANCIAL NEWS:	Page.
Baltimore's Savings Banks.....	426
New Banks in the South.....	426
New Corporations.....	426
New Securities.....	426
Financial Notes.....	426

The Traders and Truckers' Bank, recently organized at Norfolk, Va., will have a savings department as well. Its authorized capital is \$50,000. E. Black is president, and T. P. Gray, cashier.	426
---	-----

The Blue Ridge Bank of Blue Ridge, Ga., has secured a charter to do business under the title of the North Georgia National Bank, capitalized at \$50,000. J. H. Carter is president, and J. Davis, cashier.	426
---	-----

The banking firm of Messrs. Levering, Edgar & Co. of New York offer a desirable line of securities for investment, which are detailed elsewhere. They include a number of high-class railroad bonds, which can be purchased on a basis to realize 4 per cent. and over. The number of Southern securities included is very noticeable.	426
--	-----



We are now sending out representatives (free of charge in New York City and at the cost of travelling expenses only outside of the City) for the purpose of inspecting in confidence the books of firms and corporations to be closed as of June 29. These inspections enable us to quote prices for annual or semi-annual audits of books and accounts.

**The Audit Company**  
OF NEW YORK,  
43 Cedar Street.  
Telephone—3959 John.

**J. P. HORNADAY,**  
Financial Agent & Corporation Counsel.  
Southern Timber and Mineral Lands.  
Industrial Properties & Investments.  
Corporations Organized and Financed.  
1007-8 Union Trust Bldg., Cincinnati, O.

#### BANK STATEMENTS.

##### THE SAVINGS BANK OF BALTIMORE.

JANUARY 1, 1902.

The undersigned, appointed by the Board of Directors of the Savings Bank of Baltimore to audit its statement for the past year and to report thereon, have carefully performed the duty assigned them and report as follows:  
Amount of funds 31st December, 1900. \$22,949,067 06  
Received from depositors during 1901. 4,248,244 31  
Dividends on stocks, interest on loans, etc. 1,124,906 94  
\$28,322,215 31

From which deduct as follows:  
Amount paid depositors during 1901, including principal and interest. \$4,074,013 06  
Amount paid for premium and accrued interest on stocks and bonds purchased, etc. 541,583 85  
Amount paid, expenses. 46,787 24  
Amount paid, taxes. 58,166 56  
4,720,550 70

Leaving amount of funds 31st December, 1901. \$23,601,667 61

The funds are invested in Loans on Real Estate and collateral security, in the opinion of the undersigned abundantly secured, and in the purchase of Bonds and Stocks of the most substantial character.

There were open on 1st January, 1901, 48,513 Accounts. There were opened during the year 6734 Accounts. And closed during the same period 5211 Accounts. Leaving open the 31st December, 1901, 50,336 Accounts.

CLAYTON C. HALL,  
CHAS. A. WEBB,  
J. J. NELLIGAN.

INCORPORATED 1854.  
CENTRAL SAVINGS BANK OF BALTIMORE,  
S. E. CORNER CHARLES AND LEXINGTON STS.

ANNUAL STATEMENT.  
BALTIMORE, December 31, 1901.  
Funds on hand December 31, 1900. \$6,589,376 49  
Received from depositors during 1901. 2,577,702 38  
Received interest on loans, bonds, etc., during 1901. 297,663 52  
\$9,464,742 39

Paid depositors during 1901. \$2,476,503 12  
Paid taxes during 1901. 20,644 73  
Paid expenses during 1901. 22,794 22  
Paid premiums on bonds bought during 1901. 32,761 53  
2,552,703 69

Funds on hand December 31, 1901. \$6,912,038 79

Accounts open December 31, 1900. 17,904

Accounts opened during 1901. 2,410

Accounts closed during 1901. 1,900

Accounts open December 31, 1901. 18,405

We find, upon examination, that the investments of the Central Savings Bank have been carefully made in stocks and bonds of the most substantial character; that its loans are well secured, and that it is economically and judiciously managed.

Baltimore, Md., January 1, 1902.

JOHN D. HOWARD,  
MICHAEL AMBACH,  
JAMES BOND.

##### GERMAN SAVINGS BANK OF BALTIMORE CITY, SOUTHWEST CORNER OF BALTIMORE AND EUTAW STS.

BALTIMORE, January 1, 1902.

At the request of the Directors of the German Savings Bank of Baltimore City the undersigned have carefully examined the operations of the Bank for the past year and report as follows:

Amount of funds December 31, 1900. \$2,597,828 74

Received from depositors during the year. 1,314,662 51

Received interest and dividends. 131,636 55

\$4,044,128 10

Paid depositors during the year. \$1,117,472 77

Paid expenses and salaries. 15,411 81

Paid State and city taxes. 7,453 50

Deducted from premium account. 21,456 43

1,161,794 51

Leaving net amount funds December 31, 1901. \$2,882,333 59

The funds of the Bank are invested in Stocks and Bonds of standard value and in Loans secured by Real Estate, Stocks and Bonds, and in the opinion of the undersigned the Loans are well secured and the Bank is economically and judiciously managed.

Accounts open December 31, 1900. 5,236

Accounts opened during the year. 1,401

Accounts closed during the year. 796

Accounts open December 31, 1901. 5,841

GUSTAVUS A. DOBLER,  
J. H. SCHNEPFER,  
HARRY M. BENZINGER.

##### METROPOLITAN SAVINGS BANK OF BALTIMORE.

C. C. SHRIVER, President.

JAMES J. RYAN, Treasurer.

BALTIMORE, December 1, 1901.

The undersigned, a committee of examination appointed by the Managers of the Metropolitan Savings Bank of Baltimore to investigate the affairs of said corporation and to make and publish a report of such investigation, respectfully submit the following:

Amount of funds on hand December 1, 1900. \$3,060,150 29

Received from depositors during past year. 1,889,296 36

Received dividends from stocks and bonds and interest from loans. 182,668 62

Total. \$5,162,124 27

From which deduct as follows:

Amount paid depositors during past year. \$1,870,510 71

State and city taxes and expenses. 29,258 76

Premiums on stocks and bonds. 26,266 47

1,926,025 94

Leaving funds December 1, 1901. \$3,236,098 33

The funds are invested in Loans on Real Estate, Stocks and Bonds, in the opinion of the undersigned abundantly secured, and in the purchase of Stocks and Bonds of the most substantial character. The Stocks and Bonds purchased are all held below their market value, and none above their par value.

There were open December 1, 1900, 4856 Accounts; there were opened during past year 858 Accounts, and closed during same period 707 Accounts, leaving open December 1, 1901, 5007 Accounts.

MICHAEL JENKINS,  
DANIEL DONNELLY,  
V. J. BROWN,  
HENRY CLARK,  
CUMBERLAND DUGAN.

In accordance with Article IV of the By-Laws, the investments have been examined by the undersigned, a committee nowise connected with the management of the corporation, who thus characterize them:

"In our opinion the investments have been carefully made, and the valuations of the assets are conservative. We consider the condition of the bank to be sound and prosperous."

Committee of BLANCHARD RANDALL,  
FRANCIS WHITE,  
Non-Directors. LAWRENCE B. KEMP.

##### PROVIDENT SAVINGS BANK OF BALTIMORE.

(Incorporated 1886.)

STATEMENT JANUARY 3, 1902.

Funds on hand December 31, 1900. \$1,569,782 70

Received from depositors during 1901. \$1,342,921 26

Received from interest on investments. 75,411 99

1,418,333 25

\$2,988,115 96

Paid to depositors during 1901. \$1,084,681 26

Paid for expenses during 1901. 20,031 80

Paid State and city taxes, 1901. 4,348 51

Paid for premium on bonds bought. 1,660 33

1,110,721 90

Funds on hand December 31, 1901. \$1,577,394 05

Accounts open December 31, 1900. 26,145

Accounts opened during 1901. 7,453

Accounts closed during 1901. 5,421

Accounts open December 31, 1901. 28,177

The undersigned, appointed by the Board of Directors of the Provident Savings Bank of Baltimore to audit a statement of its operations for the past year, find upon examination that the above statement of funds on hand is correct, and that the investments of the Bank in bonds and mortgages appear to have been well and judiciously made, none of the bonds owned being carried upon the books above par, and that the Bank is carefully and economically conducted.

MICHAEL JENKINS,  
MILES WHITE, Jr.,  
GUSTAVUS A. DOBLER.

In addition to the above examination of the securities of the Bank, the Directors have had the accounts carefully audited by a firm of public accountants, whose certificate is

appended. The committee of the Board who examined the assets, as referred to, were Messrs. Lawrason Riggs, James Bond and James H. Smith.

LYBRAND, ROSS BROS. & MONTGOMERY, Public Accountants and Auditors.

Philadelphia, December 31, 1901.

We hereby certify that we have audited the accounts of the Provident Savings Bank for the first eight months of its current fiscal year, to wit, April 1 to November 30, 1901, and found the same to be correct.

Balance-sheet as of November 30, 1901, was submitted by us, and the securities representing the loans and investments stated thereon were inspected by a committee of the Board of Directors and certified to as being correct and in agreement therewith. We counted the cash on hand and verified the balances on deposit in other banks and trust companies on said date; prepared trial balance of depositors' accounts as of said date, having previously made verification of their postings; examined all vouchers for charges to Expense Account during the period, and saw that all items of Income were accounted for.

We found the system of accounting in use to be well adapted to the purpose and most intelligently carried out.

LYBRAND, ROSS BROS. & MONTGOMERY, Public Accountants and Auditors.

## HUNT INDUSTRIAL RAILWAYS

A narrow gauge system of track and cars for handling and transporting heavy and bulky materials of all kinds in manufacturing establishments, power stations, &c. &c.



STANDARD SHOP CAR.

Cars built to suit every variety of service, and so designed that they run around a curve of 12 feet radius as easily as a wagon turns a corner.

**C. W. HUNT CO.**  
3 Van St., West New Brighton, N. Y.

**DRY MIXER**  
The BROUGHTON  
W. D. DUNNING,  
96 W. Water St.,  
SYRACUSE, N. Y.

**The Boomer & Boschart**  
KNUCKLE JOINT  
PRESS  
For Baling Cloth, Paper, Yarn, &c.  
Or for any other purpose requiring great pressure.  
BOOMER & BOSCHERT PRESS CO.  
386 W. Water St., Syracuse, N. Y.

## DELaware TRUST COMPANY

CHARTERS SECURED UNDER THE SUPERVISION OF COUNSEL. FURNISHES A REGISTERED OFFICE FOR DELAWARE CORPORATIONS. REPRESENTS OVER \$150,000,000 OF INCORPORATED CAPITAL. REGISTRAR AND TRANSFER AGENT FOR STOCKS AND BONDS. EXECUTES TRUSTS OF EVERY DESCRIPTION. FULL INFORMATION FURNISHED UPON APPLICATION.

902 Market St., Wilmington, Delaware.

**SOUTHERN INVESTMENTS.**  
Additional Capital Supplied.  
Stock Companies Organized and Attractive Properties Financed.  
Make a Specialty of Mining, Timber and Industrial Propositions.  
Bank references furnished.  
R. E. WATSON. Ault Building. ATLANTA, GA.

## SOUTHERN INDUSTRIAL COMPANY,

Main Office: 203 McGowan Building,  
BIRMINGHAM, - - - ALABAMA.

WE INSPECT, ORGANIZE, FINANCE AND CONSTRUCT ALL KINDS OF INDUSTRIAL ENTERPRISES.

**M. R. JACOBS,**  
Cotton and Cotton Goods Broker,  
Member New York Cotton Exchange.

Cotton for Future Delivery. Cloth Accounts Solicited.

**RICHARD A. BLYTHE,**  
COTTON WARPS AND YARNS,  
No. 114 Chestnut Street, PHILADELPHIA, PA.

**BUCKINGHAM, PAULSON & CO.,** Commission Merchants,  
COTTON YARNS,

PHILA.  
CHICAGO.

CORRESPONDENCE AND CONSIGNMENTS SOLICITED.

## ALPHABETICAL INDEX OF ADVERTISERS.

Ads. marked \* appear every other week. Ads. marked † appear in first issue of the month. Ads. marked ‡ not in this issue.

A		Buffalo Forge Co. .... 56	E	I	Morrison & Kindervater. .... 6	Gavertie, T. W., Sons ..... 35
Abrasive Material Co. .... 25		Builders' Iron Foundry. .... 3	E. A. H., Box 26. .... 23	Imhauser, E., & Co. .... 25	Shelby Electric Co. .... 54	
Acme Photo-Engraving Co. .... 52		Burnam Grate Co. .... 18	Eastern Granite Roofing Co. .... 42	Imperial Gas Lamp Co. .... 54	Sherwood Bobbin & Mfg. Co. .... 47	
Acorn Brass Works. .... 53		Burrows, E. T., Co. .... 3	Eckbold's, Wm., Sons. .... 34	Incandescent Electric Light Ma- nufacturer. .... 54	Shiner, Saml. J., & Sons ..... 44	
Adams, Henry. .... 6		Burt Mfg. Co. .... 3	Edison Mfg. Co. .... 50	Mundt, Chas., & Sons. .... 54	Shulte Belting Co. .... 55	
Adams, J. M. .... 9		Bushnell, G. H., Press Co. .... 48	Electrical Material Co. .... 55	Simmonds, Wm. C. Co. .... 49	Simmons, A. D., Sons. .... 49	
Adams Laundry Machinery Co. .... 2		Bushong, M. M. .... 40	Electric Supply Co. .... 54	Murray Iron Works. .... 7	Simpson Mfg. Co. .... 39	
Affleck, Geo. E. .... 34		Byers, John F., Machine Co. .... 13	Emmett Mfg. Co. .... 1	Muzzy Bros. .... 2	Sinclair, S. H., Co. .... 2	
Aitchison, Robt., Perf. Met. Co. .... 39		C	Erie Pump and Engine Co. .... 50	Myers, F. E., & Bro. .... 50	Singer Automatic Ice Mfg. Co. .... 22	
Alabama Con. Coal & Iron Co. .... 8		Caine & Plitt. .... 36	Ingersoll-Sergeant Drill Co. .... 28	Situation Wanted. .... 1	Skinner Chuck Co. .... 25	
Alabama Iron Works. .... 44		Caldwell H. W., & Son Co. .... 4	Ingoldsby Automatic Car Co. .... 18	Smethurst & Allen. .... 55	Smethurst, F. L., Co. .... 38	
Alber & Bryne. .... 19		Caldwell, W. E., Co. .... 49	International Boiler Comp'd Co. .... 20	Smith-Courtney Co. .... 17	Smith, H. B., Machine Co. .... 44	
Albro-Clem Elevator Co. .... 10		Callahan, Geo., & Co. .... 14	International Corres. Schools. .... 6	Smith, H. C. .... 32	Smith, O. A. .... 3	
Alexander Bros. .... 26		Cameron, A. S., S. Pump Wks. .... 50	International Power Co. .... 16	Smith, Samuel J., & Co. .... 51	Smith, S. Morgan, Co. .... 54	
Alexander, S. B., Jr., Co. .... 55		Cameron & Barkley Co. .... 39	International Sprinkler Co. .... 10	Spiegel, H. F., Mfg. Co. .... 1	Southall, Stanl. Y., Works. .... 8	
Allington & Curtis Mfg. Co. .... 56		Alpha Photo-Engraving Co. .... 52	International Trust Co. .... 29	Southeastern Lime & Cement Co. .... 8	Southern Cotton Oil Co. .... 48	
Ailing, J. R., Co. .... 38		Camp Engineering Co. .... 36	J	Southern Engine & Boiler Wks. .... 36	Southern Industrial Co. .... 39	
American. .... 45		Campbell & Clute. .... 21	Jackson Mfg. Co. .... 2	Southern Iron & Equipment Co. .... 36	Southern Railway Co. .... 33	
American Arithmometer Co. .... 2		Carbondale Chemical Co. .... 23	Jacobs, M. H. .... 30	Southwark Fdy. & Mch. Co. .... 15	Spartanburg Loom Harness Co. .... 46	
American Blower Co. .... 17		Carborundum Co. .... 24	Jacobs Machine Mfg. Co. .... 21	Special Mch. Co. .... 25	Specialty Mch. Co. .... 10	
American Bridge Co. .... 1		Cardwell Machine Co. .... 46	Jackson Mfg. Co. .... 2	Spiegel, J. G. .... 10	Spier, W. E. .... 6	
American Cement Co. .... 8		Carlin Machinery & Supply Co. .... 34	Jeffrey Mfg. Co. .... 10	Spencer & Hall. .... 41	Sproul, Waldron & Co. .... 27	
American Cotton Oil Co. .... 46		Carroll, George. .... 40	Jenks, W. H. .... 56	Standard Caster & Wheel Co. .... 56	Standard Paint Co. .... 41	
Amer. Cor. School of Textiles. .... 1		Carolina Fire Brick Works. .... 44	Jenks Bros. .... 17	Standard Scale & Co., Ltd. .... 4	Standard Scale & Co., Ltd. .... 4	
American Diamond Rock Drill Co. .... 39		Carolina Portland Cement Co. .... 3	Faunt Le Roy & Co. .... 10	Stanley Electric Mfg. Co. .... 5	Starley Electric Mfg. Co. .... 5	
American Engineering Works. .... 52		Caroline Iron Works. .... 40	Jewell Water Still Co. .... 4	Star Brass Works. .... 26	Starr, B. F., & Co. .... 26	
Amer. Elec. Sup. & Mfg. Co. .... 35		Carpenter, George B., & Co. .... 11	Jewell Water Still Co. .... 5	Steel Ball Supply Co. .... 36	Steel, J. C., & Sons. .... 40	
American Frog & Switch Co. .... 13		Carver Cotton Gin Co. .... 46	Jones, J. A., & Egan Co. .... 45	Steele, J. C., & Sons. .... 47	Stephenson, P. S. .... 32	
American Injector Co. .... 3		Cary Spring Works. .... 12	Jones Mfg. Co. .... 27	Sterling Blower & Pipe Mfg. Co. .... 19	Stevens', H., Sons Co. .... 56	
American Iron & Steel Mfg. Co. .... 44		Case Mfg. Co. .... 14	Jones, J. B., & Co. .... 36	Stillwell-Biers & Smith-Valle Co. .... 19	Stilwell, E. B., & Son. .... 8	
American Locomotive Co. .... 13		Casey, D. L., Machine Co. .... 36	Jones, Joseph, Isaac, Iron Co. .... 36	St. Louis Iron & Machine Wks. .... 14	St. Louis Iron & Machine Wks. .... 14	
American Mfg. Co. .... 29		Castner, Curran & Bullitt. .... 8	Jos. Ewing, & Co. .... 42	Stamps, E. M., Co. .... 22	Stamps, E. M., Co. .... 22	
American Sheet Steel Co. .... 28		Cattell, Charles. .... 28	Kearns & Mattison Co. .... 28	Stark, J. G. .... 19	Stark, J. G. .... 19	
American Ship Windlass Co. .... 19		Cedartown Co. .... 32	Kellogg, R. W., & Co. .... 19	Starkley, P. H. .... 32	Starkley, P. H. .... 32	
American Spiral Pipe Works. .... 50		Central Savings Bank of Balt. .... 30	Kellogg, R. W., & Co. .... 21	Stewart, E. E. .... 4	Stewart, E. E. .... 4	
American Steam Gauge & Valve Mfg. Co. .... 19		Challenge Tube Cleaner Co. .... 16	Kennedy, Walter. .... 6	Stimmons, E. B., & Son. .... 45	Stimmons, E. B., & Son. .... 45	
American Supply Co. .... 47		Chattanooga Machinery Co. .... 44	Kennett Water Softener Co. .... 22	Stinebar, G. L., Iron Works. .... 17	Stinebar, G. L., Iron Works. .... 17	
American Tool Works Co. .... 21		Chattanooga Paint Co. .... 42	Kentucky Electrical Co. .... 55	Stitevant, E. F. Co. .... 37	Stitevant, E. F. Co. .... 37	
American Type Founders Co. .... 52		Chesapeake Steamship Co. .... 49	Kennett Governor Co. .... 51	Sullivan Machinery Co. .... 39	Sullivan Machinery Co. .... 39	
Andrews, Perry, & Bro. .... 50		Chester Steel Castings Co. .... 12	Gardner Governor Co. .... 51	Sweet & Doyle. .... 19	Sweet & Doyle. .... 19	
Armitage Mfg. Co. .... 43		Chicago House Wrecking Co. .... 34	Garden City Sand Co. .... 8	Obermayer, S., Co. .... 9	Obermayer, S., Co. .... 9	
Armstrong, R. S., & Bro. .... 35		Childs, O. J., Co. .... 17	Gardner Paint Co. .... 43	Ohio Fire Brick Wks. .... 25	Ohio Fire Brick Wks. .... 25	
Asphalt Ready Roofing Co. .... 43		Clarendon Boiler Works. .... 49	Garrett, C. S., & Son. .... 49	Ohio Pulley Co. .... 19	Ohio Pulley Co. .... 19	
Associated Expanded Metal Co. .... 1		Chattanooga Paint Co. .... 42	Gem City Boiler Co. .... 16	Old Dominion Lank Co. .... 21	Old Dominion Lank Co. .... 21	
Atherton Machine Co., The A. T. .... 48		Chesapeake Steamship Co. .... 49	General Electric Co. .... 54	Olds Motor Works. .... 17	Olds Motor Works. .... 17	
Atkins, E. C., & Co. .... 45		Clayton Air Compressor Works. .... 3	General Fire Extinguisher Co. .... 6	Otto Gas Engine Works. .... 2	Otto Gas Engine Works. .... 2	
Atlantic Transport Co. .... 49		Cleveland Belting & Mch'y. Co. .... 35	Genuine Bangor Slate Co. .... 12	Pancoast International Ventila- tor Co. .... 42	Pancoast International Ventila- tor Co. .... 42	
Atlas Engine Works. .... 14		Cleveland Term. & Valley R. R. .... 53	Garden City Sand Co. .... 8	Paradox Machinery Co. .... 36	Paradox Machinery Co. .... 36	
Atlas Pipe Wrench Co. .... 52		Cliff & Gilbert Co. .... 23	Gardenia Signal Oil Co. .... 28	Park Mfg. Co. .... 10	Park Mfg. Co. .... 10	
Atwell Machinery Co. .... 35		Cochran Co. .... 13	Galt, John, & Sons. .... 42	Patterson, Frank L. .... 10	Patterson, Frank L. .... 10	
Audit Co. of New York. .... 20		Collins, David S., Co. .... 36	Gandy Belting Co. .... 26	Peacock Iron Works. .... 38	Peacock Iron Works. .... 38	
Automatic Weighing Mch. Co. .... 47		Colonial Paint & Varnish Co. .... 43	Gardner Governor Co. .... 51	Fee, M., Inc., Incorporated. .... 36	Fee, M., Inc., Incorporated. .... 36	
Austin, F. C., Mfg. Co. .... 38		Columbus Bridge Co. .... 6	Gardner Paint Co. .... 43	Fechin, T. E. .... 27	Telephone Mfg. Co. .... 19	
Austin Separators Co. .... 16		Columbia Phonograph Co. .... 52	Gardner Paint Co. .... 43	Feek-Hammond Co. .... 27	Textile Mill Supply Co. .... 51	
B		Cliff & Gilbert Co. .... 23	Genuine Bangor Slate Co. .... 12	Peerless Rubber Mfg. Co. .... 18	Thompson, T. E. & Bros. .... 6	
Cohoes Iron Foundry & Mch. Co. .... 16		Columbia Refining Co. .... 42	Garden City Sand Co. .... 8	Perry, Samuel V. .... 36	Thompson, Son & Co. .... 29	
Bacon Air Lift Co. .... 50		Columbus Machine Co. .... 17	Gardenia Signal Oil Co. .... 28	Philadelphia Textile Specialty Machine Co. .... 19	Thompson, P. H. .... 32	
Badger, E. B., & Sons Co. .... 47		Columbus Machinery Co. .... 48	Gates, K. L., & Co. .... 17	Phoenix Iron Works Co. .... 47	Titus, E. E. .... 4	
Baeder, Adamson & Co. .... 25		Commercial Electric Co. .... 54	Gem City Savings Bank of Balt. .... 30	Phoenic Iron Works Co. .... 47	Toomey, Frank. .... 35	
Baer, Richard P., & Co. .... 44		Conrad, Thos. F. .... 34	General Electric Co. .... 54	Pitney, Frank. .... 35	Torber & Peckham. .... 37	
Bailey-Lebby Co. .... 41		Cook's, Adam, Sons. .... 14	General Fire Extinguisher Co. .... 6	Pitney, Frank. .... 35	Tower-Binford Elec. & Mfg. Co. .... 54	
Bailey, John T., & Co. .... 28		Cook Well Co. .... 50	Genuine Bangor Slate Co. .... 12	Pitney, Frank. .... 35	Trompe, Chas. F. .... 35	
Baird, U., Machinery Co. .... 34		Corder, Edward. .... 20	Globe & Mch'y. Co. .... 41	Pittsburgh Meter Co. .... 52	Trotak, Spencer, & Co. .... 19	
Baker, H. C., & Co. .... 36		Cordwell, & Co. .... 20	Goodwin, Charles. .... 36	Pittsburgh Rubber & Leather Co. .... 52	Trenton Iron Co. .... 10	
Balderston, H., & Son. .... 41		Cordwell, & Co. .... 20	Gould, F. M. .... 50	Pleuger & Henger. .... 7	Trevor Mfg. Co. .... 44	
Baldwin Locomotive Works. .... 18		Columbus Bridge Co. .... 6	Grant & Williams. .... 36	P. O. Box 175. .... 32	Trevor Mfg. Co. .... 44	
Ball Engine Co. .... 16		Columbus Phonograph Co. .... 52	Greaves, Kusman & Co. .... 4	Polk, A. J., & Son. .... 32	U	
Ball & Wood Co. .... *		Columbus Refining Co. .... 42	Gremel, Wm. M. .... 6	Polk, Wm. & Co. .... 32	Union Iron Works Co. .... 26	
Baltimore Engraving Co. .... 52		Columbus Machine Co. .... 17	Lexow, Theodor. .... 6	Pomona Terra Cotta Co. .... 50	United Telpherage Co. .... 10	
Baltimore Steam Packet Co. .... 49		Columbus Machinery Co. .... 48	Lidgerwood Mfg. Co. .... 14	Power Specialty Co. .... 17	University School for Boys. .... 53	
Bates, James, Sons. .... 10		Creson, Geo. V., Co. .... 38	Lowell Machine Shop. .... 46	Porter, H. E., Co. .... 13	Upton, W. B., Co. .... 6	
Baumgarten, A. F., & Co. .... 35		Crippen, H. D. .... 39	Ludlow-Saylor Wire Co. .... 41	Poulter & Co. .... 36	U. S. Cast Iron Pipe & Fdy. Co. .... 51	
Beach, H. W. .... 44		Crocker-Wheeler Co. .... 54	Ludlow Valve Mfg. Co. .... 22	Pratt & Boltwood. .... 6	U. S. Mineral Wool Co. .... 42	
Beadsley Gravity Dam & Co. .... 50		Continental Trust Co. .... 29	Lufkin Rule Co. .... 12	Pratt & Whitney Co. .... 24	Valk & Murdoch Iron Works. .... 16	
Beaumont Trust Co. .... 32		Contractors' Plant Mfg. Co., Ltd. .... 14	Lumken, Wirt W. .... 45	Pratt, N. P., Laboratory. .... 24	Valley Iron Works. .... *	
Belmont Iron Works. .... 7		Crown Dryer Co. .... 40	Magnus, L. E., & Co. .... 23	Premius Tool & Supply Co. .... 34	Vanderbilt & Hopkins. .... 23	
Berryman, James. .... 1		Crofton, John. F. .... 30	Mann, & Nyman. .... 50	Presler, C. F., Mfg. Co. .... 35	Van Noorden, E. Co. .... 7	
Bertsch & Co. .... 1		Crown Dryer Co. .... 40	Lowell Machine Shop. .... 46	Priest Machinery Co. .... 35	Van Winkle, E., Gin & Mch. Wks. .... 49	
Beyle, C. H., & Co. .... 56		Cutter, Edward. .... 20	Ludlow-Saylor Wire Co. .... 41	Price & Head. .... 45	Vapor Heating Co. .... 45	
Bickford Drill & Tool Co. .... 24		Cutter, Edward. .... 20	Ludlow Valve Mfg. Co. .... 22	Provident Savings Bank of Balt. .... 50	Vermont Farm Machinery Co. .... 1	
Bickford & Francis Belting Co. .... 27		Cypress Lumber Co. .... 36, 49	Lufkin Rule Co. .... 12	Pulsometer Steam Pump Co. .... 50	Virginia Bridge & Iron Co. .... 6	
Bifford, F. W., & Son. .... 2		D	Hartigan, R. W., & Co. .... 16	Queen City Printing Ink Co. .... 53	Vitrified Wheel Co. .... 25	
Bird, J. A., & W., & Co. .... 40, 42		Dart, E. M., Manufacturing Co. .... 10	Hartman, Wm. G., Cement Co. .... 3	Walker & Elliott. .... 40	Voorhees Rubber Mfg. Co. .... *	
Birmingham Boiler Works. .... 19		Davis Coal & Coke Co. .... 8	Haskell-Dawes Mch. Co. .... 63	Wall, P., Mfg. Supply Co. .... 10	Watson, N. A. .... *	
Birmingham Rail & Lec. Co. .... 27		Davis F. H., & Co. .... 35	Hay-Budden Mfg. Co. .... 24	Wallace Supply Co. .... *	Watson, N. A. .... *	
Blakely, A. R., & Co. .... 52		Davis, G. M., & Son. .... 49	Hayes, John W. .... 23	Walter & Legare. .... 6	Watson, E. B., & Son. .... *	
Blakesley Mfg. Co. .... 17		Hazard Mfg. Co. .... 10	Hazeldene Boiler Co. .... 16	Warner, Charles, Co. .... 8	Warren Chemical & Mfg. Co. .... 43	
Blanton, Jr., E. A. .... 40		Hawthorne, Hamilton & Rimmer. .... 43	Hazeldene, Hamilton & Rimmer. .... 17	Warren-Ehret Co. .... 41	Westinghouse Air Brake Co. .... 20	

# SPECIAL Advertisements OF GENERAL Interest.

OPPORTUNITIES FOR INVESTORS.

## ADVERTISING RATES FOR SPECIAL ADVERTISEMENTS:

Inches.	1 time.	2 times.	3 times.	4 times.
1.....	\$ 1.75.....	\$ 3.00.....	\$ 4.25.....	\$ 5.00.....
2.....	3.00.....	5.50.....	7.50.....	10.00.....
3.....	4.25.....	7.50.....	11.75.....	15.00.....
4.....	5.50.....	10.50.....	15.00.....	20.00.....
5.....	6.75.....	13.00.....	19.00.....	25.00.....
6.....	8.00.....	15.00.....	21.50.....	25.00.....
1/2 page (13 in)	16.00.....	30.00.....	40.00.....	50.00.....

Coal, Iron and  
Timber Lands.

## Come to West Virginia.

**Why?** It has more and a greater variety of undeveloped resources close to Eastern and Western markets than any other State. The WEST VIRGINIA CENTRAL & PITTSBURG RAILWAY penetrates the heart of the virgin timber forests and coal deposits. Cheap fuel, cheap raw material and unsurpassed railway facilities make that territory most desirable for manufacturing industries. For information in regard to timber and coal lands and manufacturing sites address

HOWARD SUTHERLAND,  
Gen'l Land Agent, ELKINS, W. VA.

For Sale—From 3000 to 3500 Acres of  
**TIMBER LAND**

situated in Georgia, Orangeburg Co., S. C., near the South Carolina Road. About half of the tract is adapted for planting purposes, cotton, rice, corn, potatoes, sugar cane and tobacco, balance standing timber, within easy reach of Branchville and Bostontown. Apply to

S. DIMBLE, Orangeburg, S. C.  
VANDERBILT & HOPKINS, 126 Liberty St., N. Y.

**FLORIDA TIMBER.**

40,000 acres saw mill timber, average 2,000 feet per acre. Lies along the Seaboard Air Line Railway. Easy logging, low freight rates to Gulf and Atlantic Port. Price \$1.25 per acre, includes land, contains considerable cypress.

Send for prospectus.  
BROBSTON, FENDIG & CO.,  
BRUNSWICK, GA.

## FOR SALE.

**40,000 Acres Round Pine  
Timber Lands.**

Near S. A. L. Railway and Plant System, in Lake County, Fla. Easy terms.

S. LOGAN LANG, Camden, S. C.

FOR SALE—A tract of 2000 Acres of  
**COAL and TIMBER LAND,**

in Cumberland County, Tennessee, accessible to the newly constructed Tennessee Central Railroad. Mines in immediate vicinity producing excellent quality of coal. Titles guaranteed.

Address A. H. GILLINGHAM,  
HARRIMAN, TENN.

## FOR SALE.

**10,000** acres of Coking Coal in Southern Illinois. Two veins 4½ and 7 feet thick. Held under option by parties ready to sell. Between two railroads, another in prospect. Address

P. O. Box 175, Harrisburg, Ill.

**CAROLINA PINE.**

Two tracts of standing TIMBER well located on rail and water with low freight rates. This is first-class timber, and the price is very reasonable.

Apply to  
P. S. STEPHENSON,  
Attorney-at-Law,  
NORFOLK, VA.

**SOUND INVESTMENTS.**

The REALTY DEPARTMENT of the Beaumont Trust Co. has been established for the convenience of those seeking investments of any nature in the South. Its specialties are—Timber, Oil and Rice Lands, at the lowest possible prices. Rice plantations and pumping propositions. Timber tracts from 1000 to 125,000 acres. Address the Department, at Beaumont, Texas.

JOHN J. WESTCOTT, Manager.

## To The Manufacturer

Of cotton, wool, fertilizers, furniture or wood fibre, the territory traversed by the NASHVILLE-CHATTANOOGA & ST. LOUIS RAILWAY offers excellent advantages. Raw phosphate exists in the greatest abundance.

The region is contiguous to the cotton field and is within the wool-bearing belt. It is besides timbered with such trees as are suitable for the manufacture of wood fibre.

The water powers are superb, coal for fuel convenient and low in price, labor is 25% cheaper than in the North and finished products may be transported to all markets domestic and foreign at rates as favorable as those accorded to other manufacturing districts in the United States.

For particulars write, call on or address,

**J. B. KILLEBREW,**  
INDUSTRIAL AND IMMIGRATION AGENT,  
Nashville, Tenn.

## YOUR ATTENTION, PLEASE!

**Virginia**

offers a number of fine openings in the line of

**MINING,  
MANUFACTURING  
and  
FARMING.**

Along the lines of the  
**Norfolk and Western Railway**

are hundreds of towns extending you a hearty welcome.

Address for pamphlets and information  
W. B. BEVILL, PAUL SCHERER,  
G. F. A., Agt. Lands & Industries,  
ROANOKE, VA.

**EXCEPTIONAL OPPORTUNITY.**

I control eleven patents on a  
**Shutterless Fire-Proof Automatic  
Closing Metal Window,**

also command a large power plant for their manufacture. Will sell part interest to a wide-awake business man with sufficient capital to execute orders.

Write for information or call and examine samples and plant.

H. C. SMITH,  
143 Federal St. BOSTON, MASS.

## FOR SALE OR EXCHANGE.

A VALUABLE

**STONE QUARRY AND BRICK PLANT**

Brick Plant to make Red Shale and Fire Brick, 70 acres of Clay and Coal Mines attached, 100 Acres of good Fire Clay and Ganister Rock. Brick plant in good shape, modern in construction, with labor saving appliances. TENEMENT HOUSES, etc.—This property for sale or exchange for property or interest that would not require owner's time or attention to care for. This is the only reason for selling, as this plant is a money maker. Plant located near Pittsburg, has connections with B. & O. and P. R. R. Address, E. A. H. Box 26 SCOTTDALE, PA

**Small Rolling Mill**

## For Sale Cheap.

Opportunity to get into the iron business on easy terms at the right time.

Mill is located on main line of Railroad, favorably situated for export.

Supply of raw material assured.

Will sell for cash or take part payment in Stock in a Company.

Fullest references given and required.

Address ROLLING MILL,  
Care Manufacturers' Record.

## FOR SALE.

**Sash, Door and Blind Factory,**

with Foundry and Mach'ne Shops attached. Lot 200x200 ft. All buildings brick; main building 50 x 165 ft.; office and storeroom 24x80 ft; foundry 40x45 ft. Side track near freight and passenger stations. For particulars address

P. H. THOMPSON, Salisbury, N. C.

**William Polk & Co.**

Investors,  
Promoters, Real Estate Dealers,  
and Managers of Estates.

**TIMBER LANDS A SPECIALTY.**

Correspondence Solicited, Address

**First National Bank Building,  
ALEXANDRIA, LA.**

If you wish to keep posted on the progress of the South, read the Manufacturers' Record. Price \$4 a year.

**Towns Wanting Factories.**

## An Investment and a Home

IS WHAT **Cedartown, Ga., OFFERS**

to the manufacturer or homeseeker. Located in the healthy Piedmont Section, surrounded by natural advantages. Its Raw Material and Mineral Resources offer excellent openings, for the manufacturer seeking a location.

**Cedartown, Ga., IS A**

growing city and one of the best known in the South. It has Water Works, Electric Light Plant, and a complete Sewerage System. Let us send you a few facts about the industries already here.

FOR FURTHER INFORMATION, ADDRESS

**Charles Adamson, Vice-President and Gen. Manager,**

119 S. Fourth Street, PHILADELPHIA, PA.

## WHEELING, W. VA.

has advantages as a manufacturing point that cannot fail to interest you, if you contemplate the establishment of a new plant or the removal of your present one. CHEAP FUEL (Coal or Gas); LOW TAXES; LOW-PRICED SITES and UNSURPASSED SHIPPING FACILITIES are the attractive features. Has the idea ever struck you that the United States Steel Corporation should know the peculiar advantages of all sections of this country? They are expending more money to enlarge their plants located in the WHEELING DISTRICT than on all others combined. What does this signify?

The INDEPENDENT people have tumbled to it. Full details will be furnished upon application to the Secretary.

Wheeling Board of Trade, Wheeling, W. Va.

## Good Sites at Low Prices

Are offered MANUFACTURERS at

## Alexander City, Alabama.

Admirable location for Cotton Mill, Knitting Mill, Furniture Factory, Stove Works, Implement Works.

ALEXANDER CITY is well located, high, healthy, pure water, good market, excellent churches and free schools.

Before deciding to locate write us. We can interest you.

Write for information to

BENJ. RUSSELL, Treasurer,

Industrial and Development Association,

Alexander City, Alabama.

## Woodworking PLANTS

## WANTED

At a number of points in the South along  
the line of the

## Southern = Railway.

There are good openings for Woodworking Plants, such as FURNITURE FACTORIES, PLANING MILLS, SPOKE AND HANDLE FACTORIES, or other plants using pine or hardwoods. Local people will invest from \$6,000 to \$8,000 with an experienced man who will himself invest a like amount or more and do a legitimate business. For information write to

M. V. RICHARDS,

Land & Industrial Agent,

Washington, D. C.

SOUTHERN RAILWAY.

Advertise in the Manufacturers' Record.

## THE Meldrum Camphor & Chemical Co.

Camphor and Celluloid Crystal Refiners,  
and Manufacturing Chemists.

Incorporated under the Laws of the State of Delaware.

Capital \$500,000

Divided into 50,000 6 per cent. Preference Shares of \$5.00 each and 50,000 Ordinary Shares of \$5.00 each, payable \$2.00 on Application, \$1.00 on Allotment, and \$2.00 three months after Allotment.

Issue of 27,000 6 per cent. Preference and 27,000 Ordinary Shares of \$5.00 each, at Par.

### DIRECTORS:

ARCHIBALD MELDRUM, F. I. S., Blackshear, Ga., President.

M. TEMPLE TAYLOR, Savannah, Ga.

GARDNER W. KIMBALL, of Delaware Trust Co., Wilmington, Del.

C. G. MURRAY, Blackshear, Ga., Resident Director for the Globe Mfg. Co., Ltd.

### SOLICITORS:

ESTES & WALKER, Blackshear, Ga.

### AUDITOR:

EDMUND WILLCOX, Chartered Accountant,  
London and New York.

Boston Office, 42 Court Street, Boston, Mass.

### ASSISTANT CHEMIST:

J. S. GRAY, Blackshear, Ga.

BANKERS:  
BLACKSHEAR BANK, Blackshear, Ga.  
GERMANIA BANK, Savannah, Ga.

### Office and Works, - BLACKSHEAR, GEORGIA.

M. TEMPLE TAYLOR, Treasurer, SAVANNAH, GA.  
C. G. MURRAY, Secretary, BLACKSHEAR, GA.  
Registered Office: 902 Market St., WILMINGTON, DEL.

### ABRIDGED PROSPECTUS.

This Company has been formed to adopt and carry out an agreement between Archibald Meldrum, Manufacturing Chemist, Blackshear, Ga., U. S. A. (lately with the Blackshear Manufacturing Company, Blackshear, Ga.), and the Globe Manufacturing Company, Limited, Camphor Refiners and Manufacturing Chemists, 11 Mansion House Chambers, London, England, and whose works are situated at West Norwood, England, Hoboken, Antwerp, France, the said agreement being dated 2d day of September, 1901.

The agreement comprises the sole rights of United States and Canada to manufacture Camphor, Celluloid Crystals and by-products under the Globe Manufacturing Company's various processes.

The processes being secret, it is not desirable in the interests of the Company to give any details, but the secret documents have been duly sealed and deposited with the Company's solicitors as per agreement with Mr. Meldrum.

A working capital of \$50,000 is ample for the manufacturing of 50 tons of Camphor, Celluloid Crystals and by-products per month, and for which a market has already been acquired. The gross profit on this production is estimated to give, after bearing all charges, a sum not less than \$120,000 for distribution on the Preference and Ordinary shares, leaving a sum of \$70,000 for the purpose of reserve fund, or for further extension of the business.

The Company also acquires 250 acres of land, a dwelling-house and an abundance of fine timber. The purchase price for the land is \$600; for the rights to manufacture, under the various processes, \$282,000, leaving a balance of \$211,800. The total cost for building works and installing plant and machinery capable of producing 3 tons per day is \$61,800, leaving the working capital at \$50,000, and \$100,000 for future issue.

The only agreements existing are: 1st. Between the Company and Archibald Meldrum, wherein he sells to the Company the American rights for manufacturing at \$282,000, and 250 acres of land, including dwelling-house and timber, at \$600; total \$288,200, payable as to \$158,200 in cash and \$130,000 in Ordinary shares.

2d. Agreement between the Company and Archibald Meldrum, wherein the latter agrees to act as Managing Director for 10 years at a salary of \$5000 per annum.

3d. Agreement between Archibald Meldrum and the Industrial Trust Company, 60-62 Liberty street, New York, as to the guaranteeing of this issue.

Mr. Meldrum will be a large stockholder, having agreed to accept a large portion of the purchase price in Ordinary stock, thus showing the business will be conducted upon safe lines. Mr. Meldrum is a thorough, practical manufacturing chemist, understanding the practical manufacture of Camphor, its by-product, Borax, Boracic Acid, Sulphuric Acid, Arsenic, Starch and many other chemicals too numerous to mention. Any improvements that Mr. Meldrum may bring out as regards reducing cost of manufacture, or new processes, become the property of the Company. This Company will consider the manufacture of various chemicals, and more especially Arsenic, and for which there is a growing demand. A convention was held at Brunswick, Ga., on April 9, 1901, to consider the cultivation of the plant known as "Cassava." Starch can be manufactured at a low cost from this plant, and should it be planted to any great extent in this State, starch manufacturing will also be considered. It is estimated the Company will be in a position to fill orders early next year. Already arrangements have been and are being made for the sale of the total output of the Company's products.

The advantages of manufacturing at Blackshear are many. Firstly, the air is pure; secondly, the water is good and free; thirdly, labor is cheap; fourthly, transportation is easy, as the railroad would run into the works; fifthly, it is handy for New York and other markets, also for shipping. The imports of Camphor for year 1899 amounted to 1,807,541 pounds, valued at \$322,100, and in 1900 1,789,590 pounds, valued at \$485,071. It will be seen there is a good outlook for this Company.

No promotion money is being paid, and Mr. Meldrum pays all expenses up to allotment. Prospectuses and application forms may be had of the

NATIONAL PROMOTING & AUDITING CO., Fiscal Agents, 42 Court St., Boston, Mass.

# Bargains in Machinery

FOR IMMEDIATE DELIVERY.

## Ten 150 H.P. Boilers

LOCOMOTIVE TYPE.

Built of the best materials and in the best manner. Good for 100 lbs. working pressure. Tubes 3" diam. x 16 ft. long. Fire-boxes 7 ft. x 5 ft.

PRICES LOW.

THOMAS P. CONARD,  
119 S. Fourth St. PHILADELPHIA, PA.

NEW AND SECOND-HAND

## Machine Tools.

### Lathes.

96" swing, 56" x 12'; 44" x 24';  
30" x 22'; 24" x 17'; 22" x 12';  
22" x 7'; 21" x 10'; 20" x 8';  
19" x 8'; 18" x 6'; 17" x 6';  
16" x 5'; 14" x 6'; 15" x 6'.

### Drill Presses.

60", 44", 36", 23", 20".  
One ro-spinning Turret Drill.  
One 15" Post Drill.

### Planer.

24" x 6' New Haven.

### Shapers.

18" new and one 16".

### Pipe and Bolt Cutters.

4", 2" and one 1 1/2".

### Hammers.

Radial Arm Steam, 350 and 225 lbs.  
80-lb. Trip.  
15" x 9" Boyer Pneumatic.

Wood-working Machinery.  
24" Sin. Surfacer, Planer and Matcher.  
13" Jointer.  
Self-feed two-sided Panel Raiser.  
Jig Saws Single Saw.  
15" x 16" Wood Lathe.  
12" x 5" Wood Lathe.

Engines, Boilers, Hoists, Locomotives, Steam Shovels, Rock Drills, etc., etc.

CARLIN MACHINERY & SUPPLY CO.  
Lacock and Sandusky Sts.  
ALLEGHENY, PA.

## READ THIS!

If you are in the market for a second-hand Boiler and Engine, Steam Pump, Feed-Water Heater, Steam Trap, Dynamos, second-hand Belting, Pulleys, Hangers and Shafting, second-hand Steam Pipe, any size or quantity; Wrought Iron Tanks, Smoke Stacks of any kind, kindly communicate with us, as we are in a position to fit you out, and will guarantee perfect satisfaction or refund the money and bear all expenses.

JOHN HENNING & SON,  
1016-20 East Susquehanna Ave., Philadelphia, Pa.

### FOR SALE.

## Frick Ice Machine.

Twenty-five Ton Refrigeration.  
Ten Ton Manufacturing.

First-class condition. Cost \$10,000.  
Selling price to move quickly \$2500.

### HOWARD RIEMAN,

317 W. German St. BALTIMORE, MD.

### FOR SALE.

Lot of Boilers, Engines, Lathes, Planers, Drill-Presses, 1 Large Fire Pump, Steam Pipe, all sizes, and about 500 Tanks of different sizes.

WILLIAM ECKBOLD'S SONS,  
712 E. Girard Ave. PHILADELPHIA, PA.

### STEAM ENGINES.

1 20" and 36" x 48" Tandem Hamilton Corliss, wheel 22" x 56" face.  
1 18 and 38 x 8 Tandem Corliss, wheel 22" diameter x 50" face.  
1 26x72 Wheelock.  
1 29x72 Wheelock.  
1 22x42 Watts & Campbell.  
1 22x36 Tangy frame Porter-Allen.  
1 20" x 48" Geo. H. Corliss.  
1 18x48 Greene.  
1 18x42 Lane & Bodley.  
1 14 1/2 x 24 Buckeye.  
1 14 1/2 x 16 Buckeye.  
1 11x30 Wheelock.  
1 10x24 Harris.  
1 18 1/2 x 18 Ideal automatic.  
1 16x16 Ames.  
1 15 1/2 x 15 Armington & Sims automatic.  
1 14x13 Armington & Sims automatic.  
1 13x14 Watertown automatic.  
1 11x12 Ames automatic.  
1 13x15 Buckeye automatic.  
1 9x12 Buckeye automatic.  
1 8x8 Ideal automatic.  
3 12 & 20x12 Westinghouse compound.  
1 16 & 27x16 Westinghouse compound.  
1 18 & 30x16 Westinghouse compound.  
1 15 & 25x20 Tandem Stearns.

### BOILERS.

2 175 H. P. Stirling Boilers, 150 lbs.  
2 250 H. P. B. and W. Boilers, 125 lbs.  
1 Battery 5-7/8" x 17" Boilers.  
1 Battery 4-7/8" x 16" Boilers.  
2 5' x 15' Vertical Manning Boilers.  
2 50 H. P. Hazelton Boilers.

### WE DO REPAIR WORK.

ROSSITER, MacGOVERN & CO.

Electrical and Steam Machinery,

141 Broadway, N. Y. Factory, Jersey City, N. J.

SEND FOR NEW CATALOG.

## Second-Hand

## MACHINERY

For Immediate Delivery.

1 16" x 5' Pratt & Whitney engine lathe.  
1 18" x 11' New Haven engine lathe.  
1 20" x 21' Johnson Engine lathe, C. R. & T. A.  
1 48" x 24" triple geared engine lathe, C. R.  
1 52" x 44" x 24" Selmers planer.  
1 26" x 24" x 6" New Haven planer.  
1 24" x 24" x 5" Powell planer.  
1 15" x 15" x 3" Garvin planer.  
1 10" New Haven crank shaper.  
1 15" Hendey shaper, swinging table and vise.  
1 14" traverse head crank shaper.  
1 20" upright drill.  
1 22" upright drill.  
1 25" Blaisdell upright drill.  
1 40" New Haven upright drill.  
1 No. 4 Lodge & Davis universal milling machine.  
1 No. 1 Brainard milling machine.  
1 No. 7 Brainard plain milling machine.  
1 Warner & Swasey reamer grinder.  
1 26" power squaring shear.  
1 18 1/2" x 6" cabinet turret lathe, engine feed.  
1 20" x 7" cabinet turret lathe, engine feed.

U. BAIRD MACHINERY CO.

123-125 Water St.

PITTSBURGH, PA.

### SECOND-HAND

## Rope Transmission Rig

CONSISTING OF

1 22 foot Grooved Wheel, 73" face with 22 grooves for 2 1/4" rope. The shaft is 20" diameter in wheel, 18" in bearings and has clutch coupling on end.  
2 heavy Pillow Blocks with 30" bearing.  
1 54" Grooved Wheel, 73" face, with 22 grooves for 2 1/4" rope; bore 10 1/2".

All parts are heavy, well proportioned and in the best of condition.

## WICKES BROS.

45th St. and A. V. R. R.

PITTSBURG, PA.

## ICE MACHINES

### FOR SALE.

Six 75-ton Ice Machines,  
Vertical compression type,  
complete in every way.

We purchased them from Armour & Co., Chicago.

They were discarded owing to the necessity for increase of power and for no other reason. They are in excellent condition, and we are now engaged in removing them from their Chicago Stock Yards Plant. They can be inspected, and two of them are still in use. This is an excellent opportunity and will make exceedingly alluring propositions to purchasers.

Full description and information will be furnished on application.

## LOCOMOTIVE.

One Rogers Locomotive, standard gauge, 30 ton.

## Chicago House Wrecking Co.

W. 35th and Iron Streets,

CHICAGO.

## SPECIAL BARGAINS.

**LATHES.**  
16 in. x 6 ft. Engine Lathe, Perkins.  
18 in. x 7 ft. Engine Lathe, Perkins.  
18 in. x 8 ft. Engine Lathe, Porter.  
20 in. x 10 ft. Eng. Lathe, Silk-Anderson.  
28 in. x 12 ft. Engine Lathe, Fay & Scott.  
20 in. B. G. Drill, Hoefer.  
20 in. B. G. & S. Feed Drill, Davis.  
25 in. B. G. & S. Feed Drill, Hoefer.  
12 in. Crank Shaper, Juengst.  
12 in. Crank Shaper, Springfield, M. T. Co.  
30 in. x 30 in. x 7 ft. Planer, New Haven.  
36 in. x 30 in. x 7 ft. Newell & Phillips.  
48 in. H. & P. Gear Cutter.  
1 Brainerd B. G. Miller.  
Sensitive Drills, Screw Machines, Presses, etc.

## BARGAINS.

If you wish to buy or sell please let me know. Can give bargains in new and second-hand machines at all times for immediate shipment.

CEO. E. AFFLECK,

108 Liberty St., N. Y.

### FOR SALE.

## Concrete Mixer

Gasoline Engine Driver, and mounted on skids. All in first-class condition. For any further information write or call.

GEO. HILL, opp. Elizabethport Station, N. J.

### FOR SALE.

## The Machinery of First-Class Cotton Mill,

Now in operation. Address

M. S., care Mfrs. Record.

### FOR SALE.

## SECOND-HAND BOILER ROLLS

in good condition, 10' 6" between housings; will roll one-half inch plate.

E. KEELER CO., Williamsport, Pa.

## FEED-WATER HEATERS

2nd-Hand 80, 160 and 250 h. p. Berrymans, 200 h.p. Goubert, 150 and 600 h.p. Wainwrights, 500 h.p. National, 600 h.p. Stillwell-Bierce Open Heater. All guaranteed. F. L. PATTERSON, Havemeyer Bldg., N. Y.

## FOR SALE.

One second-hand "BERRYMAN" HEATER AND PURIFIER, in perfect condition and guaranteed good as new. Will sell cheap for cash. Address

M. F., care Mfrs. Record, Baltimore, Md.

## PRENTISS TOOL & SUPPLY CO.

115 Liberty St., New York, N. Y.  
Buffalo Office, 304 D. S. Morgan Bldg.  
Pittsburgh Office, 120 First Ave.  
Boston Office, 200 Franklin St.

## FOR SALE.

One second-hand "BERRYMAN" HEATER AND PURIFIER, in perfect condition and guaranteed good as new. Will sell cheap for cash. Address

M. F., care Mfrs. Record, Baltimore, Md.

**FOR QUICK DELIVERY.**  
18", 22", 24", 26", 28", 30",  
32" and 36" Lathes. Any length.  
**SCHUMACHER & BOYE,**  
Cincinnati, O.

## SECOND-HAND WOOD-WORKING MACHINERY FOR SALE CHEAP

Send for our new list of PLANING MILL and FURNITURE MACHINERY. We send photograph of everything.

**PRICE MACHINERY CO.,**  
507 Great Northern Bldg., CHICAGO, ILL.

ALWAYS POSITIVE BARGAINS IN

### White & Middleton Gas Engines.

All Sizes and Guaranteed as Represented.

Large line of Steam Engines, Boilers and Pumps, all sizes; 6-H.P. Hoisting Engine, 8-H.P. Portable Engine and Boiler, 175-Light (nearly new) C. & C. Dynamo, 2 Rev. and Drum Cylinder and Job Printing Presses, Shafting, Hangers, Pulleys and Forge, Wire Belt Fastener, 1/4-H.P. Water-Motor, complete Stereotype outfit, complete Plants and Machinery of all kinds bought, sold and exchanged.

**MENGEL'S MACHINERY EXCHANGE,**  
26 E. Balderston Street. BALTIMORE, MD.

**John A. Waters & Co.**  
134-17½ S. Eighth Street, RICHMOND, VA.

New and Second-Hand Boilers, Engines, Mining Outfits and General Machinery.

**3 100 H. P. Return Tubular Boilers,** made by the Penn. Boiler Works (new, never having been in brick work) with stack and breeching complete.

**2 65 H. P. Return Tubular Boilers,** very fine, A. No. 1 condition.

**1 7x10 Double Cylinder and Double Drum Hoisting Engine,** in A. No. 1 condition, having been used but very little.

**1 4x6 Double Cylinder and Single Drum Hoisting Engine,** as good as new, only used a few weeks. Both of these Hoisting Engines have been thoroughly overhauled in our plant.

FOR SALE.

## SHEARS

5 pairs of Alligator Shears, for cutting hoop bands and light iron, belt driven, good order.

1 RE-SQUARING SHEAR for light sheets.

A. F. BAUMGARTEN & CO., Pittsburg, Pa.

### MACHINERY BARGAINS.

1 3-sided Planer and Matcher, Frank, \$175. 1 38" Connell & Dengler Circular Re-Saw, \$125. 1 42" 3-roll Egan Sander, \$400. 1 30" Single Drum Sander, \$45. 2 20" Pony Planers, each, \$65. 1 24" Single Surfer, \$100. 4 Engines, a Boilers. Write for complete list.

**CLEVELAND BELTING & MACHINERY CO.**  
CLEVELAND, OHIO.

**FOR SALE.**—Band Saw, Scroll Saw, 7" and 14" Floorers, Circular Re-Saw, E. B. Surfaces, Stationary Bed Planers, Planers and Matchers, Du Four Picket Header, Shapers, Moulders, Aut. Knife Grinder, "Doig" 8" Tube Aut. Nailer, Blind Slat Tenoner, Blind Stile Mortiser and Borer, Knife Balance, Swing Saw, Lathes, Shaving Fans. Cash buyers for new or re-manufactured wood-working machinery, can save money by writing to

C. C. HARRIS, 717 N. 2nd St., St. Louis, Mo.

## SECOND HAND Electrical Machinery

BOUGHT AND SOLD.

Correspondence solicited.

**THOMPSON, SON & CO.**

107 Liberty Street, NEW YORK.

## Engine Bargains

100 h. p. 12x24 Buckeye Automatic. 100 h. p. 12x20 Rice Automatic. 150 h. p. 14x20 Cummer 4 valve Automatic. 250 h. p. 12x22x18 Payne Tandem Cpd. Auto. 130 h. p. 14x28 Buckeye Automatic. 60 h. p. 10x12 Ball High Speed. 40 h. p. double cylinder 6x6 Marine. 50 h. p. 12x18 Slide Valve. 200 h. p. 12x18 Slide Valve. 45 h. p. 11½x18 Slide Valve. 60x16 ft. Tubular Boiler. 200 h. p. Stillwell-Bierce Heater.

The above are all in first-class condition and ready for shipment. Will buy, sell or exchange.

**A. L. DAWSON & CO.,**  
27-31 W. Washington St., CHICAGO, ILL.

### Largest Stock of Engines, Boilers, Dynamos and General Machinery. Rebuilt and Guaranteed.

Immediate Delivery.

1 28" x48" Green Automatic. 1 16½" x32" x36" Cross Compound Fitchburg Automatic. 1 12" x16" McEwen Automatic. 1 22" x32" Watertown Automatic. 2 20" x42" Green Automatics. 2 17" x30" Williams Automatics. 1 15½" x16" New York Safety Automatic. 1 15" x12" Harris Corliss. 1 14" x27" x14" Westinghouse Compound. 2 15½" x15" Armstrong & Sims Automatic. 2 14" x18" Beck Automatic. 1 14" x16" McEwen Automatic. 1 13" x14" Vertical Fitchburg Automatic. 1 10" x18" x12" Ball Tandem Compound. 2 12" x18" Russell Automatics. 2 13" x12" Ball Automatics. 1 10" x16" Buckeye Automatic. 1 9" x10" New York Safety Automatic. 2 80 H. P. Westinghouse Compounds. 5 75 H. P. Westinghouse Standard Automatics. 2 65 H. P. Westinghouse Compounds. Also a great many others, all types. Send for special list.

**BOILERS**—2 300 H. P. Climax Vertical Water Tube Boilers, 2 280 H. P. & W. Water Tube Boilers, 200 lbs. steam pressure. 1 300 H. P. A. & R. Water Tube Boiler, 165 lbs. steam pressure. 2 100 H. P. National Water Tube Boilers. 5 66" x18" Horizontal Tubular Boilers, 125 lbs. steam pressure. 3 66" x18" Horizontal Tubular Boilers, with Hawley down draft. 3 66" x16" Horizontal Tubular Boilers, 125 lbs. steam pressure. 2 66" x16" Horizontal Tubular Boilers, 100 lbs. steam pressure. 4 54" x16" Horizontal Tubular Boilers, 100 lbs. steam pressure. 2 48" x14" Horizontal Tubular Boilers, 100 lbs. steam pressure.

Several full Railway and Electric Lighting Equipments. Large stock of Machine Tools. Also a large assortment of New Machinery for immediate delivery—Lathes, Planers, Shapers, Drill Presses, Milling Machines, Dynamos, Motors, Gas and Gasoline Engines, Steam and Centrifugal Pumps, Contractors' and General Supplies. Write for special catalogue and prices.

**FRANK TOOMEY,**  
127-131 N. Third Street, PHILADELPHIA, PA.  
Long Distance Telephone 261-262.

### FOR SALE.

#### Wood and Iron Working Machinery, New and Second-hand.

If in the market for machinery, send for our descriptive price list.

**LOUIS E. RECHTIN & BRO., Cincinnati, O.**

FOR SALE.

Two Davis & Furber Machine Co.'s Nappers; good as new; used only short time. One Miller Press & Machine Co.'s Press; used only 6 months.

**DELGADO MILLS,**  
WILMINGTON, N. C.

### MACHINERY BARGAINS.

**Automatic Engines**—1 12" x14" self-contained, Chandler & Taylor. 1 12" x16" center crank, Erie City Iron Works.

**Horizontal Engines**—Cylinders 16" x24", 12" x20", 9" x12", 9" x14."

**Portable Engines**—1 25 H. P. on skids; engine mounted on boiler.

**Vertical Engine and Boiler**—1 8 H. P. engine and 10 H. P. boiler combined, on one base; boiler has submerged tubes.

**Stationary Boilers**—1 60" x19", 20" x11", 1 48" x16", 40 3/4" x11" flues.

**Vertical Boiler**—1 10 H. P. one-flue boiler in excellent condition, 2 10 H. P., submerged tubes.

**Steam Pumps**—Single and duplex, all sizes. **Grist Mill**—1 24" under runner geared mill, iron frame, good as new.

Correspondence solicited.

**CHAS. F. TRAMPE,**  
940-942 North Main St. ST. LOUIS, MO.

FOR SALE.

A large number of Chapman high pressure steam valves, ranging in sizes from 4" to 14", in A1 condition at half price.

**R. S. ARMSTRONG & BRO., Atlanta, Ga.**

FOR SALE.

The Best Equipped **Spool and Bobbin Outfit** in the South. Machinery is all new and modern. Inability to devote time to business the only reason for selling. Correspondence solicited. Address "BOBBINS," care Manufacturers' Record.

**2D-HAND BERRYMAN HEATERS,**  
all sizes. Taken in trade for our Improved Berryman. In perfect order. Tested and guaranteed. Prices reasonable. BENJ. F. KELLEY & SON, Makers, 91 Liberty St., N. Y.

## Second-hand Engines, Boilers, etc.

1 20x48 Allis Corliss Engine, right hand, Girder frame type. 1 18x42 Allis Corliss Engine, left hand, Girder frame type. 3 66" x16" Standard Tubular Boilers. 6 60" x16" Standard Tubular Boilers. 1 12 and 18 1/2" x10" x12" Buffalo Steam Pump Co.'s compound duplex pump. Root Blowers, Nos. 2, 3 and 5. Large assortment of iron and wood working tools.

**WISCONSIN MACHINERY & MFG. CO.**  
125-127 W. Water Street, MILWAUKEE, WIS.

### For Sale—Dynamics, Engines, Boilers, &c.

**DYNAMOS**—Brand new, modern, best make, fully guaranteed for one year, 110 volt, compound wound.

27-light Dynamos, all complete, \$67.50. 53-light " " " 112.50. 93-light " " " 146.25. 130-light " " " 183.75. 200-light " " " 206.25. 270-light " " " 228.75.

**MOTORS**—Brand new, best make, 110 volts, 34 horse, \$28.50; 1 horse, \$36; 2 horses, \$67.50; 3 horse, \$90; 5 horses, \$135; 7 horse, \$162.50; 10 horse, \$183.75; 20 horse, \$228.75. Have also 220 and 500 volt motors.

We have also some first-class second-hand Machinery, as follows: Alternating Current Dynamos—2 1300-light Westinghouse at \$385 each, also others.

ENGINES.

100 H. P. Westinghouse Compound, \$475. 50 H. P. Dick & Church Automatic, \$300. 125 H. P. Westinghouse Compound, \$600.

Also some 150, 250 and 350 H. P. Engines.

**BOILERS**—2 60" x16" Hor. Tubular, at \$260 each.

Also larger and some smaller Boilers.

Berryman Heaters—1 700 H. P. \$195; also smaller ones. Electric Power Generators—100 H. P., 500 volts, \$67.50; also others. Pulleys, Shafting, Belting, etc. Write us.

**American Electric Supply & Mfg. Co.**  
27 Thames Street, NEW YORK CITY.

### BARGAINS IN

## Second-hand Machinery

Steel Pressure Blowers. Vertical Boilers, 6 to 60 H. P. Hor. Tub. Boilers, 27 to 100 H. P. 3 Hor. Tub. Boilers, 125 H. P., fine condition. 15-25-75 H. P. Hor. Slide Valve Engines, 3/4 and 10 H. P. Vertical Engines, 2 and 7 H. P. Gas Engines, 3 H. P. Shipman Coal Oil Engine. Conant Corn Cooker. Corn Sinker. Corn Cutter. One Fisher Kettle. Open Kettles. Lot Trucks. 6 Hugies Steam Pumps, 4 1/2" x6" x6", 4" suction, 3" discharge. One each Worthington and Dean Duplex Pumps and Receivers. S. A. Woods A Flooring Machine. Gray & Woods Planer, 24" x16" x15". Tenon Machine. Mortising Machines. Conant Feed Rip Saws. Sliding Carriage Cut-off Saw. Swing Saw. Variety Moulder. 18" and 20" Pony Planers. Huntingdon Hor. Boring Machine. Machinery, Engines and Boilers Bought, Sold and Exchanged.

**J. D. MALLORY,**  
23 Light Street, BALTIMORE, MD.

### FOR SALE.

1 Blake Crusher, 20x10 with 35 h. p. Engine and Boiler, in first class order.

2 Lidgerwood Hoisting Engines, double 7x10, single drum, without boiler.

1 Phoenix Engine, 100 h. p.

Floating Pile Drivers, Deck and Derrick Scows, 2 000 ft. dredges, 300 ft. 24" 5-ply Conveyor Belting, as good as new.

**J. C. SAXTON, 18 Broadway, New York, N. Y.**

### BIG BARGAINS.

General Electric, three phase, sixty cycle, Inductor Motors

1 15-25 H. P. 110 volt, speed 300, price \$350.00

1 30-40 H. P. 110 volt, speed 300, price \$350.00

1 75-100 H. P. 550 volt, speed 600, price \$1000.00

Chicago delivery, ready to ship. Hundreds of other bargains in stock. **GUARANTEED ELECTRIC CO.**

133 S. Clinton St., CHICAGO.

Chas. E. Gregory, President.

### FOR SALE.

200,000 pounds Second-Hand Riehle Testing Machine, in first-class condition. Address

**E. B. BOGGS,**  
P. O. Box 668, NEW YORK CITY.

Tanks, Steam Pumps, Boilers, Engines and Frictionless Babbitt Metal, for sale.

Machinery of all Kinds manufactured.

ESTIMATES FURNISHED.

**E. J. CODD CO.** Baltimore, Md.

### FOR SALE.

Five hundred pieces of Second-hand Iron and Woodworking Machinery, Engines, Boilers, etc. Send for list.

**L. F. SEYFERT'S SONS,** PHILADELPHIA, PA.

### FOR SALE.

#### ENGINES.

1 13x12 Ball automatic.

1 15x16 Ball automatic.

1 12x10 New York Safety.

1 13x12 McEwen tandem compound.

1 11x10 Westinghouse.

1 13x12 Westinghouse.

</div

FOR SALE—New or Second-Hand  
STEEL T

## RAILS

Light or heavy section.  
WE BUY OLD RAILS if fit to relay.

Robinson &amp; Orr, 419 Wood St., Pittsburgh, Pa.

## Second-hand Machinery

## FOR SALE.

One marine steel fire box boiler 10 feet long, 73 inches diameter.  
Eight cylinder boilers, 36 inches diameter, 36 feet long.  
One Lane & Bodley engine, 14x20.  
One smoke stack, 4 ft. in diameter, 61 ft. long.  
One single cylinder slide valve 15 H. P. hoisting engine.  
One Wm. E. Hill & Co.'s drag saw.  
One surfer.

THE CYPRESS LUMBER CO., Apalachicola, Fla.

## ENGINES.

22" x 42" Wright Corliss.  
14" x 30" Horizontal Slide Valve.  
10" x 20" Suppice Horizontal.  
8" x 7" Upright Yoke Engine.  
4 1/2" x 7" Upright Oscillating.

For sale cheap. For further particulars and prices apply to

POULTERER &amp; CO.

410 Bullitt Building, PHILADELPHIA, PA.

## FOR SALE!

1 25-h. p. locomotive boiler, 1 15-h. p. return tubular boiler and ten radiators, also 6 miles 40-lb. steel relaying rails. Southern delivery, first of January, and 40,000 capacity flat cars.  
LOCOMOTIVES, standard and narrow gauge. 1 75-h. p. ret. tub. boiler; 70 ton 40-lb. steel T rail, immediate delivery. Also a Forney type saddle tank standard gauge Porter locomotive, cylinder 12x18, diameter of driving 42", thickness 2 1/2", also an 8-wheel American type, Rodgers make, 14x22" cylinder. 1 Saw Mill, capacity about 12 or 20,000 ft. a day; also 3000 Standard M. C. & good second hand couplers, one 42" gauge passenger coach and two 75-H. P. return tubular boilers. These goods are all right. Write

JOS. E. BOWEN, Citizens Bank Bldg., Norfolk, Va.

## FOR SALE—CHEAP.

2 first-class 66" x 18" Tubular Boilers with 54" Tubes; boilers connected by both mud and steam drums; full flush front fixtures; built in 1897; subject to inspection; Tupper grate bars, etc. Can deliver about January 15th.

WALTER A. ZELNICKER, in St. Louis.  
Branch Offices: The Rookery, Chicago; Townsend Bldg., N. Y.; Godchaux Bldg., New Orleans; Pioneer Press Bldg., St. Paul.

FOR SALE.—Engine 12x16, \$200; 12x16, \$200. Traction Engines, 10 and 12 horse, \$300; 10 and 12 horse portables on wheels, \$175 each. One Fire Engine, made by Cole Bros., Pawtucket, R. I., all complete. Pratt & Whitney Drill Presses, 12" swing, \$15. Five Boilers, 56x18, twenty flues 6" diam., \$300 each. 16-horse Portable Engine and Boiler on wheels, with Pony Saw Mill, \$300. 10-horse Hoisting Engine, Portable Boilers, 20, 30, 35-horse, with engines to match, at one-third their actual value. Machinery of every description at buyers' prices. D. L. CASEY MFG. CO., Springfield, O.

## FOR SALE.

ENGINE, built by the H. K. Porter Co., Pittsburgh, Pa.; 12 ft. high, standard gauge, cylinders 12" x 16", four 36-inch drivers, saddle tank, suitable for heavy loads and sharp curves. Weight about 44,000 lbs. Address General Manager,

FAIRMONT COAL COMPANY,

FAIRMONT, WEST VIRGINIA.

## PLATE BENDING ROLLS

## FOR SALE.

One pair Hilles & Jones Plate Bending Rolls, 92" between housings, top roll 8 3-16" diameter, bottom rolls 7 3-16", in good condition and cheap.

CHAS. T. LEHMAN,

BIRMINGHAM, ALA.

## HIGH SPEED ENGINE BARGAINS.

No.	H. P.	Maker.	Cylin.	Speed.	Whls.
2	150	Buckeye "C"	14x16	240	72x15
4	150	Westingh'se	13x22x13	250	
1	125		11x19x11	300	
2	75	"	12x11	300	
1	75	N. Y. Safety	12x12	300	
1	100	Porter-Allen	12x20		
1	50	Arm. & Sims	9x12		
1	35	Baragwanath Heater	brass tubes.		

CAMP ENGINEERING CO., 47 W. Lake St., Chicago, Ill.

SPECIAL.—40-H. P. OTTO DOUBLE CYLINDER

## Gasoline Engine

with all fittings and connections complete and in best of condition for sale at \$500  
Guaranteed as stated. Now running a wood-working plant.

PARADOX MACHINERY CO., 151 E. Division St., CHICAGO.

## New and Second-Hand

## Iron Tools and Woodworking Machinery

Corliss and Double Valve Engines for Trolley Roads and Electric Lighting Stations.

H. C. BAKER &amp; CO.,

114 N. 3d Street, Philadelphia, Pa.

## NOTICE.

One Worthington compound duplex steam pump, size 12x18 1/2x10 1/2x10, 8" suction, 7" discharge; also others.

Two traction engines, 25 h. p. each, in A-1 condition.

One 20x40x36 Wright Corliss tandem compound engine; one 18 1/2x34x42 Fitchburg tandem compound engine; also others.

Five 42" gauge saddle tank locomotives; cyls. 7x12 to 9x14. Also six standard gauge "American type" locomotives; cyls. 16x24.

Sixteen 18" gauge one yard cap. Peterel dump cars.

One Osgood steam shovel with 3/4 yard dipper; also one Souther with a 2 yard dipper; and others.

CORRESPONDENCE SOLICITED.

GRANT & WILLIAMS,  
Park Row Building, NEW YORK.

## FOR SALE.

## STEAM PLANT

containing 10 Horizontal Return Tubular Boilers, 4x6-foot Diameter, 125 H. P. each, 100 lbs. steam; 6 Strap Riveted, 125 lbs. steam; say 64 ft. diameter; 1 1/2 tubes 3 1/2" diameter, 18 ft. long; all with fixtures complete and practically good as new. Four steam engines from 60 to 700 H. P., Simple and Compound, but little used; 6 Electric Generators, 30 to 150 K. W., 210 to 500 volt; all above, immediate delivery, price very low. Will sell any part.

JOHN DAVIS CO.

81 Haverhill Street, BOSTON, MASS.

## FOR SALE.

11" x 24" Horizontal Slide Valve Engine, Double Hoister Engine and Boiler, 15-horse Portable, 6-horse Vertical Boiler, 8x2 Vertical Engine, 4-horse Baxter, 50-horse Heater.

Wanted—30" Lathe, short bed.

J. F. DENIHAN,  
430 Hamilton Ave., Brooklyn, N. Y.

## FOR SALE.

TWO 70 H. P. BOILERS, new; manufactured by the Pennsylvania Boiler Works, Erie, Pa. 5-16 steel shell, 3/4 steel heads; dome, 28x30; 42 ft. of smokestack and guy wires with each boiler; also safety valves, steam gauges, water gauges, gauge cocks, check and stop valves and other fixtures. For price and full description, address

THE DAVID S. COLLINS CO., Yankee Dam, W. Va.

## FOR SALE.

CORLISS ENGINE,  
20" x 42", left hand good as new, must be sold at once—room needed.

R. D. COLE MFG. CO.,  
Newnan, Ga.

W. M. P. DAVIS,  
Equitable Building, ATLANTA, GA.

Second-Hand Wrought Iron Pipe, all sizes.

Light Rails, 8-lb. to 25-lb. Eye Beams and Channels.

## RELAYING RAILS

## FOR SALE.

300 tons, standard section, Steel T Rails, 30 lbs. to the yard, with joints, frogs and switches, in central Penna. Immediate shipment.

HYDE BROS. &amp; CO.

902 Lewis Building, PITTSBURG, PA.

## FOR SALE.

Five street cars.  
Twelve dump cars.  
Eight box cars.  
One Passenger coach.  
One Vulcan Steam Shovel.  
Two narrow gauge engines.  
One mile 30-lb. steel relayers and splices.  
Two miles 20-lb. steel relayers and splices.

THE ISAAC JOSEPH IRON CO.

525-531 Hunt St, Cincinnati, Ohio.

522 Monadnock Block, Chicago, Ill.

## WANTED.

Send full description, price, etc., first letter.

Address W. F., care Manufacturers' Record.

310 to 320 Morgan St., ALLEGHENY CITY, PA.

## Heavy 36" Gage LOCOMOTIVES

### FOR SALE.

(Immediate Delivery)

We own and offer the following:

2 16"x20"-Cyl.	10 Wheelers.
2 14"x16"	Moguls.
1 13"x18"	Mogul.
2 12"x16"	Moguls.

We own 20 other light locomotives,  
all gages.

10 50,000 Capacity Flat Cars.
16 40,000 "
14 30,000 "

CORRESPONDENCE SOLICITED.

**Torbert & Peckham**

MONADNOCK  
BLOCK, Chicago.

New York Office:

220 Broadway.

### FOR SALE.

## Second-Hand Locomotives.

**M. SABEL & SONS,**

Montgomery, Ala.

We have Twelve Standard Gauge Locomotives on hand, for sale cheap. Write for descriptive lists and prices.

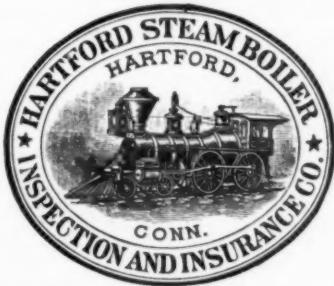
### FOR SALE.—Immediate Delivery.

One (1) 50-ton Shay (Gared) Locomotive, standard gauge, three cylinders. Used less than six months. Is in perfect order. Two (2) 50-ton Consolidated Locomotives, standard gauge, in good order. Two (2) 40-ton Passenger Locomotives, standard gauge, in good order. 300 Box, Flat and Gondola Cars.

New York Equipment Company, 71 Broadway, New York.

Incorporated  
1866.

Charter  
Perpetual.



Issues Policies of Insurance after a careful Inspection of the Boilers, Covering all Loss or Damage to Boilers, Buildings and Machinery, and Damage Resulting from Loss of Life and Personal Injuries Caused by Steam Boiler Explosions.

Full information concerning the plan of the Company's operations can be obtained at the  
**COMPANY'S OFFICE, HARTFORD, CONN., or at any Agency.**

J. M. ALLEN, President. W. B. FRANKLIN, Vice-Prest. F. B. ALLEN, 2d Vice-Prest.  
J. B. PIERCE, Sec. L. B. BRAINERD, Treas.

GENERAL AGENTS IN THE SOUTH.

LAWFORD & MCKIM, . . . . . BALTIMORE, MD., . . . . .  
C. C. GARDINER, . . . . . ST. LOUIS, MO., . . . . .  
LOUIS V. CLARK & CO., . . . . . BIRMINGHAM, ALA., . . . . .  
W. S. HASTIE & SON, . . . . . CHARLESTON, S. C., . . . . .  
PETER F. PESCU, . . . . . NEW ORLEANS, LA., . . . . .

OFFICES.

Chamber Commerce.  
319 N. Fourth Street.  
2021 First Avenue.  
44 Broad Street.  
8-8 Gravier Street.

## Sturtevant Forges

Are Built for Endurance.



In the portable style the hoods are of heavy steel plate, the running gear is strong and easily operated, the tuyere irons are extra thick to resist fire, and the fire pan is of double thickness with asbestos between. The blower is the same as the regular Sturtevant Steel Pressure Blower, with babbitted journal boxes.

Those designed for heavy work are built in a full line of sizes, with heavy cast iron fire pans, adjustable tuyeres, and special down draft hoods when so ordered.

**B. F. STURTEVANT CO., Boston, Mass.**

New York. Philadelphia. Chicago. London.

191

### FOR SALE.—Rails and Locomotives.

We offer for sale, for Southern delivery, 300 tons 35-lb., 350 tons 40-lb. and 100 tons of 30-lb. steel relaying rails. Also 12 first-class standard and three-foot gauge locomotives.

WRITE US FOR PRICES AND TERMS.

BIRMINGHAM RAIL & LOCOMOTIVE CO.

Birmingham, Ala.

## HAVE YOU ANYTHING TO SELL TO FARMERS?

If you have, the SOUTHERN FARM MAGAZINE will find new customers for you. The Magazine has in the last four years, as an authoritative periodical of information about agricultural capabilities and conditions in the South, built up an extensive circulation in the Northern, Western and Northwestern States among farmers who want to move South. As a result of its work there has been a constant and rapid increase in the volume of agricultural immigration to the South. With the recent enlargement of its work it becomes invaluable to all intelligent and progressive farmers of the South as a high class exponent of Southern agriculture. Its circulation is being vigorously pushed in all the fourteen Southern States. It is now, therefore, valuable as a means of reaching farmers not only throughout the North but also and especially in all parts of the South.

It will help you to sell Farm and Garden Implements and Machinery, Breeding Stock (Cattle, Horses, Sheep, Swine, Poultry), Stock Remedies, Farm and Stock Appliances and Specialties of every sort, Dairy Supplies, Seeds and Nursery Stock, Fertilizers, Household Articles and everything needed by the farmer or his family.

An advertisement in the Southern Farm Magazine will open up new channels of trade for you. TRY IT!

## SOUTHERN FARM MAGAZINE,

Manufacturers' Record Building,

BALTIMORE, MD.

### For Sale Cheap.

Two style "H" Gates Crushers. One set 36x15 Gates Rolls with R. S. shells and automatic feeder. One 19x9 Gates-Blake Crusher. One Max F. Abe 36x15 in., continuous feed and delivery tube mill, wedgewood lined, on wood frame.

CHICAGO PORTLAND CEMENT CO.

513 Chicago Stock Exchange Bldg., Chicago, Ill.

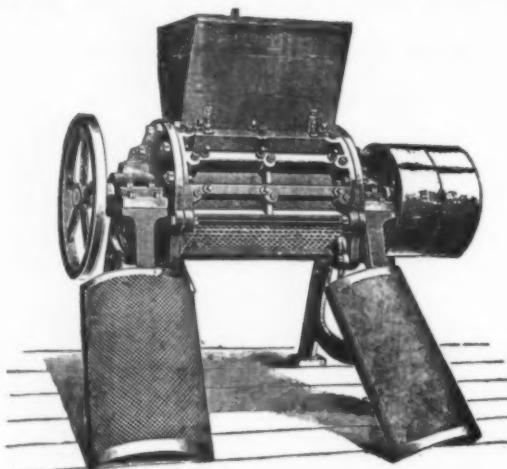
Subscribe to the Manufacturers' Record.  
Price \$4 a year, or six months for \$2.

### FOR SALE.

Second-hand Circular Saws, gummed and hammered complete, ready to run, practically as good as new, in the following sizes: two 45-in. 9x10 gauge; one 47-in. 7x8; three 48-in. 9x10; two 50-in. 8x9; one 52-in. 8x9; three 52-in. 9x10; one 54-in. 7x8; one 54-in. 9x10; two 56-in. 8x10; one 60-in. 8x10; three 60-in. 9x10; two 62-in. 8x10; one 62-in. 9x10; one 63-in. 8x10. We guarantee the temper and metal to be all right. If you want bargains write quick while they last.

THE MILLER OIL & SUPPLY CO.  
INDIANAPOLIS, IND.

## THE ALSING CUTTER.



FOR CUTTING TO ANY DESIRED SIZE

Leather, Rags, Paper Stock,  
Strawboard, Roots, Herbs,  
Leaves, Barks, Spices, &c.

Which it reduces to the exact size before  
they can be discharged from the Cutter.

EASILY SHARPENED.

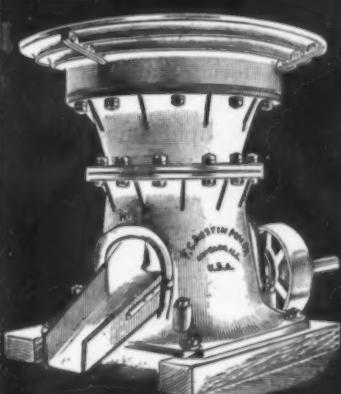
For full information address the Manufacturers,

J. R. ALSING CO., 75 Guernsey St., BROOKLYN, N.Y.  
(Established in 1869.)

ALL KINDS OF

CRUSHING, GRINDING AND PULVERIZING MACHINERY.

## AUSTIN CRUSHERS



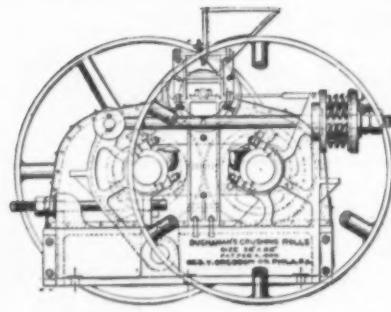
TECHNICALLY and MECHANICALLY WITHOUT A FAULT

LEAST LIABLE TO  
GET OUT OF REPAIR, AND MOST  
ECONOMICAL IN CONSUMPTION OF  
POWER

WRITE TO DEPARTM'T G.  
for special catalogue of Crushers,  
Dump Cars and Contractors'  
Machinery.

F. C. AUSTIN MFG. CO., HARVEY, ILL.

## Buchanan's Crushing Rolls.



Drawing of 36" x 22" Rolls, weight complete  
37,000 lbs. Hammered Steel Shaft, 9" in bearings,  
11 in. center. Interchangeable phosphor bronze bearings, 9" x 22 1/2". Crushing shells,  
4 1/2" thick, of open hearth or manganese steel.  
Automatic continuous feed and dust covers  
for dry crushing.

GEO. V. CRESSON CO.,  
Philadelphia and New York.

Our Rolls are strictly HIGH GRADE. All  
sizes from 18" up to 60". Send for Catalogues  
on Buchanan's Ore Breakers and Magnetic  
Separators.

Power Transmitting  
Machinery.

C. G. BUCHANAN,  
Consulting Engineer.

Department of  
Crushing and Concentrating  
Machinery

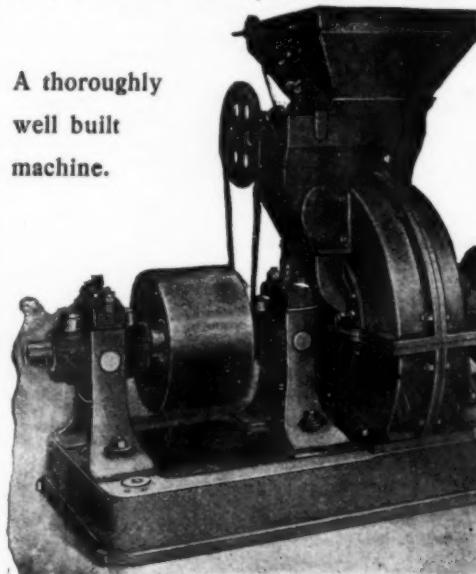
141 Liberty Street,  
NEW YORK, U. S. A.

## The COGSWELL MILL,

Over  
2000  
in operation.

### THE ORIGINAL AND STANDARD FOR GRINDING

Cotton Seed, Cotton Seed Hull, Oil Cake, Corn, Corn and Cob together, Corn and Oats together, Feed of all kinds, Resin, Spices, Alum, Borax, Cocoanut Shell, Drugs, Sugar, Starch Material (Carbon), etc., etc.  
Capacity 3000 to 5000 pounds of feed meal (through No. 16 wire cloth) per hour.



A thoroughly  
well built  
machine.

The best is the  
cheapest, as it  
costs less for  
repairs and is  
always ready.

THE A. & F. BROWN CO.

Successors to  
M. C. COGSWELL,

25 Dey St., NEW YORK.

## The SCIENTIFIC

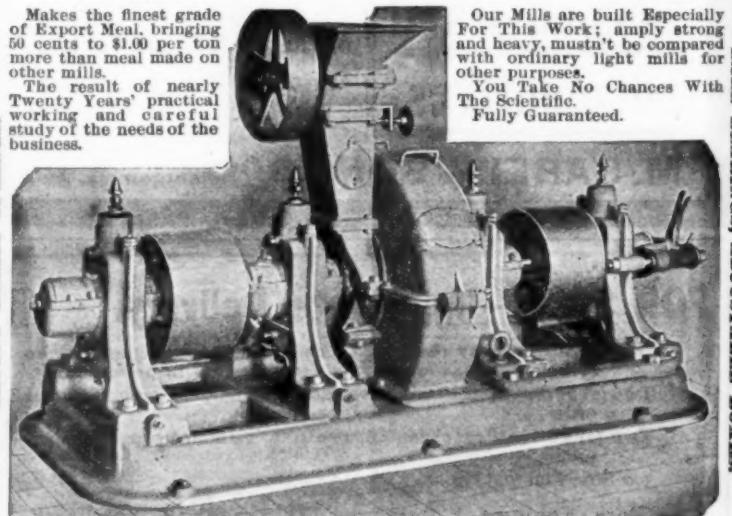
### Attrition Mill For Oil Cake.

Makes the finest grade  
of Export Meal, bringing  
50 cents to \$1.00 per ton  
more than meal made on  
other mills.

The result of nearly  
Twenty Years' practical  
working and careful  
study of the needs of the  
business.

Our Mills are built Especially  
For This Work; amply strong  
and heavy, mustn't be compared  
with ordinary light mills for  
other purposes.

You Take No Chances With  
The Scientific.  
Fully Guaranteed.



SAFETY RELIEF SPRINGS.

Send for  
Art Catalogue.

THE FOOS MFG. CO., Springfield, O.

## The Smidh Ballmill The Davidsen Tubemill

excel all others for grinding cement  
rock, clinker, ore, etc.

We design and completely equip Port-  
land Cement Manufacturing Plants.

TWENTY YEARS' EXPERIENCE de-  
voted exclusively to the Engineering of  
Portland Cement Plants, Lime and  
Brick Works.



F. L. SMIDH & CO.  
ENGINEERS,  
66 MAIDEN LANE, corner William Street, NEW YORK.  
COPENHAGEN, Vestergrage, 29. LONDON, 9 Bridge St.

## CARS

MINING, LOGGING, PLANTATION, CONTRACTORS,  
SUGAR CANE and SMALL CARS OF ALL KINDS.

Wheels, Axles, Irons, &c.

Send for  
Catalogue.

PEACOCK IRON WORKS, Selma, Ala.

Write  
Catalog

Ship

XUM

**Sullivan  
Machinery  
Company,**

135 Adams St.,  
Chicago.

**Rock Drills,  
Diamond Drills,  
Air Compressors,  
Hoisting  
Machinery.**

The most extensive line  
of sizes and styles ever  
offered.



Write for  
Catalogue D.

**ROCK DRILLS  
AND  
DRILL MOUNTINGS.**

Electrical Blasting  
Apparatus.

**The John M. Rogers**  
Boat, Gauge and Drill Works,  
GLOUCESTER CITY, N. J., U. S. A.

**ROCK DRILLS AND  
AIR COMPRESSORS**

Which Pay the User.

**RAND DRILL CO.**

128 Broadway, N. Y.

Simplest and Most Economical

**ROCK DRILLS,**

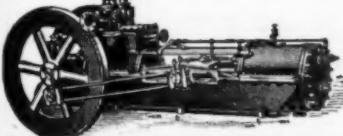
**AIR COMPRESSORS,**  
of the Most Improved  
TYPES.

SOLE AGENTS FOR THE

Kennedy Patent Air Lift.

McKIERNAN DRILL CO.

120 Liberty St., New York.



**CORE DRILLING WITHOUT DIAMONDS.** CORES 1 IN. TO  
20 IN. DIAMETER.

MANUFACTURERS OF

**CORE DRILLING MACHINERY**

For all purposes. Contractors for Prospecting Mineral, Quarry and Coal  
Lands with Core Drills. Correspondence solicited. Send for circulars.

**C. F. Preslar Manufacturing Co.,**

231 Plum Street.

CINCINNATI, OHIO.



**PERFORATED METAL**

FOR RICE MILLS, SUGAR WORKS,  
PHOSPHATE MINES.  
THE ROBT. AITCHISON PERFORATED METAL CO.  
303, 305 DEARBORN ST. CHICAGO ILL.

**PHOSPHATE MACHINERY and SUPPLIES.**

Engines, Boilers, Saw Mills.

Shafting, Hangers, Wood Split Pulleys, Steam Pumps, Centrifugal Pumps, Steel Rails, Spikes  
and Fastenings, a Full Line of Railroad Supplies, and a Full Line of Bar Iron,  
Iron Pipe, Valves, Fittings, Rubber and Leather Belts.  
Agents for CUMMER'S DRYER.

Write for our large Illustrated Catalogue. THE CAMERON & BARKLEY CO., Charleston, S. C.

**Reduce Cost  
of Mining  
50%**

**HOW ?**

Write to

**H. D. CRIPPEN,**  
52 BROADWAY, NEW YORK.

For full particulars.

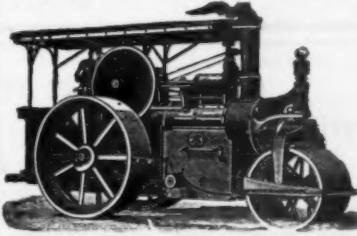
**60,000  
FLEXIBLE  
HAMMER  
BLOWS  
EVERY  
MINUTE**

IS THE TREATMENT GIVEN MATERIAL THAT  
FALLS INTO THE HOPPER OF THE STANDARD SIZE

**SIMPSON  
COMPOUND  
HAMMER  
PULVERIZER**

"A PULVERIZER THAT PULVERIZES"  
MANUFACTURED BY  
THE SIMPSON MFG CO.  
MAIN OFFICES: 1208 Chamber of Commerce, CHICAGO.  
WORKS: Winthrop Harbor, Ill.

**STEAM ROAD ROLLERS**



THE O. S. KELLY CO.  
SPRINGFIELD, O.

**AUTOMATIC PULVERIZER**

For the Reduction of All  
SOFT, HARD and FIBROUS MATERIALS.



**VACUUM  
SEPARATORS**

**ROLLER  
MILLS**

**Stone and Ore Crushers.**

ASK FOR CATALOGUE.

Raymond Bros. Impact Pulverizer Co.,  
1402 Monadnock Block, Chicago, Ill., U. S. A.

**.. THE ..  
GRIFFIN MILL**

IS NOW USED  
BY OVER 50 OF THE  
LARGEST

**Portland Cement Manufacturers  
in the world.**

For the highest references and illustrated cata-  
logue giving full description, address

**BRADLEY PULVERIZER COMPANY,**  
92 State St., Boston, Mass.

If you wish to keep posted on the prog-  
ress of the South, read the Manufacturers'  
Record. Price \$4 a year.

**CARBONS**

(Black Diamonds.)  
FOR  
**DIAMOND DRILLS**  
and all mechanical purposes.

THEODOR LEXOW, Importer,  
12 to 16 John St., near Broadway, NEW YORK.  
HENRY DEMMERT.

**DIAMOND**

For Prospecting Mineral  
Lands and Veins.

Take out a solid core, giving per-  
fect sample of material  
penetrated.

MACHINES for any  
depths, and for steam,  
compressed air, hand or  
horse power.

SEND FOR CATALOGUE.

**AMERICAN  
DIAMOND ROCK DRILL CO.**  
120 Liberty St., NEW YORK.

**ROCK DRILLS**

# Magnite

Cold Water Paint.

# Magnite

Mining, Crushing, Conveying and Milling Machinery.

E. A. Blanton, Jr.

Philadelphia Bourse,

Philada., Pa., U. S. A.

PHONE 45-13.

## Crushing and Grinding Machinery.

Crushers, Dryers, Rotary Kilns.  
Pulverizing Machinery for all  
Materials.  
Sectional, Plain and Continuous  
Feed and Discharge Cylinders.

Tube Mills, Grit Mills, Ball Mills.  
Chaser Mills.  
Porcelain Linings for all sizes in  
stock.

FLINT PEBBLES.

Complete Equipment Furnished for Cement Manufacturing Plants, Etc.

WEST PULVERIZING MACHINE CO.

ST. PAUL BUILDING, 220 BROADWAY, NEW YORK.

H. C. LARRABEE.

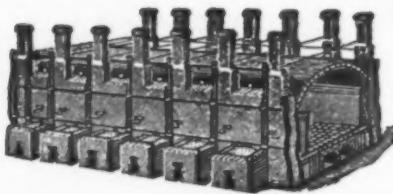
CAROLINE IRON WORKS,

Pyrites Burners Lump or  
Fine.

Eggs, Nitre Pots Various  
Acid Egg a Specialty.

Cor. Caroline and Lancaster Sts., Baltimore, Md.

## BRICK KILNS



M. M. BUSHONG,

For Burning  
Paving Brick,  
Dry Press Brick,  
Sewer Pipe,  
Terra Cotta and  
All kinds of Claywares.

PHOENIXVILLE, PA.

THE HIGHEST DEVELOPMENT IN THE ART OF BRICK MAKING  
is represented in our XX machine, as here shown, fitted with single column,  
end cut with sander. Length 42 feet. Capacity from 3,500 to 5,000 per hour.  
Complete line down to 6,000 capacity per day. Write for prices.

J. C. STEELE & SONS, STATESVILLE, N. C.

## OHIO BRICK and TILE MACHINES

Six sizes. Capacity 50,000 to 60,000 daily.  
Drain Tile, Hollow Building Blocks, etc.

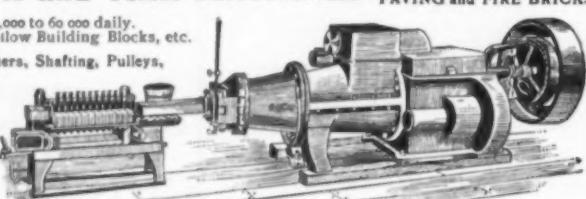
Pug Mills, Clay Crushers, Shafting, Pulleys,  
Belting, Castings.

Send for Catalogue.

E. M. FRESE & CO.

Galion, Ohio, U. S. A.

Unequalled for BUILDING,  
PAVING and FIRE BRICK.



## Don't Whitewash!

Use MAGNITE instead.

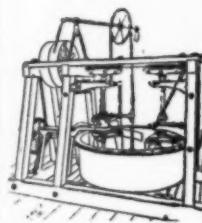
Nearly all the advantages of oil paint at a fraction of  
its cost. It's easily put on, will not rub, scale or discolor,  
nor soften with age and moisture.

Your Insurance is Cheaper, too, when you use it.

Anyone can apply it. Only common sense  
and ability to use a paint brush needed.

J. A. & W. Bird & Co.

34 India Street, BOSTON, MASS.



## Fertilizer Mill

Also

Crushing and Grinding Machinery.

WALKER & ELLIOTT,

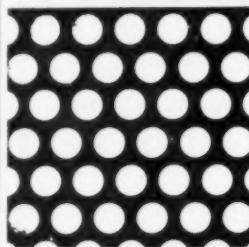
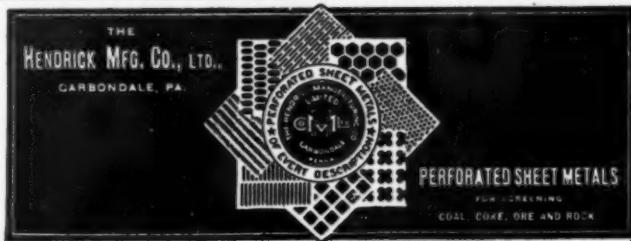
Wilmington, Del.

Send for Prices.

## LEAD PIPE OR SHEET LEAD

For Sulphuric Acid Chambers

Send your orders to The JAMES ROBERTSON MANUFACTURING CO., Baltimore, Md.



## Perforated Metals

ALL KINDS FOR EVERY PURPOSE.

Cotton Seed Oil Mills, Phosphate Mills. Centrifugal  
Machine and Filter Press Plates a Specialty.

CHAS. MUNDT & SONS, Mfrs.

88 and 90 Walker St., NEW YORK.

BRICK MACHINES,  
Clay Grinding and Tempering Mills,  
Brick Yard Supplies.

Complete Equipments—Hand or Power.  
Interesting Catalogue upon request.

GEO. CARNELL,  
1819-21-23 N. Germantown Ave., Cor. 5th,  
PHILADELPHIA, PA.

Whatever Your Needs, We Can Supply Them.

THE FERNHOLTZ BRICK MACHINERY CO.

MANUFACTURERS OF

Dry Press Brick Machinery.

Dealers in Brick Yard Supplies.  
ST. LOUIS, MO.

Salem Machine Works.

FLOUR MILL BUILDERS.

Manufacturers of a complete line of mill machinery. Estimates cheerfully given. An up to date roll grinding and corrugating plant in operation.

Lock Box 322, Salem, Va.

## Charleston Lead Works

Manufacturers of

ALL SIZES AND WEIGHTS OF

## LEAD PIPE AND SHEET LEAD.

Also Proprietors of the Charleston Excelsior Mattress and Broom Works.

CHARLESTON, S. C.

## The Crown Dryer

is  
the  
Best  
for  
Bricks.



THE CROWN DRYER CO.  
NEW ENGLAND BUILDING,  
CLEVELAND, OHIO.

FOR OUR PUTTYLESS STEEL SKYLIGHT Engineers and Architects  
Specify  
**"REX SYSTEM"**  
(PATENTED)

The only system where the effects of expansion are overcome. The only permanently watertight system (guaranteed). Be convinced of its low cost and send for estimate and detail drawings.  
**NATIONAL SKYLIGHT & CONSTRUCTION CO.**  
Horticultural Architects and Builders. Structural Iron Work. 120 LIBERTY ST., NEW YORK.

High Grade  
**Metal, Slate and Gravel Roofing**

Covering Buildings of Permanent Character.

Lowest Figures. Prompt Estimates.

**COLUMBIA ROOF & PAVING CO.,**  
COLUMBIA, S. C.

BRANCH:  
CHARLOTTE ROOF & PAVING CO.



STATE CAPITOL BUILDING, COLUMBIA, S. C.

Metal Work and Asphalt Gravel Roofing done by us. A few other contracts, covering of which is Felt and Gravel Roofing and all Metal Work.

Union Passenger Station and Depot, Savannah, Ga.  
Union Passenger Station and Depot, Columbia, S. C.  
Williamston Cotton Mills, Williamston, S. C.  
Durham Traction Co., Durham, N. C.  
Craddock Terry Shoe Factory, Lynchburg, Va.

**AGENCY WARREN'S ANCHOR BRAND ASPHALT  
ROOFING MATERIALS.**

**Charlotte Roof & Paving Co.,** Charlotte, N. C.

**Tram Car Wheels and Axles,  
REVOLVING SCREENS.**

**THE GEORGE FOUNDRY & MACHINE WORKS,** ROME, GA.

**THE NEW JERSEY WIRE CLOTH CO.**

Manufactures

**WIRE CLOTH**  
FOR ALL PURPOSES.

**POULTRY NETTING,  
WOVEN WIRE FENCING.**

ROEBLING'S WIRE is used in all of the products of this Company.

For Catalogs, Samples and Information, address

**TRENTON, N. J.**

**J. E. BOLLES Iron and Wire Works.**



Bank Railings, Elevator Enclosures and Cars, Grills, Electro Bronze Work, Architectural and Builders' Iron Work, Etc.

Send for catalogue and mention this paper.

**DETROIT, MICH.**

**LUDLOW SAYLOR WIRE CO.**

Northeast Corner Fourth and Elm Streets, ST. LOUIS, MO.

**ARTISTIC METAL WORK**

In Brass, Wire and Wrought Iron. Elevator Enclosures and Cabs, Bank and Office Railings, Grilles, Fences, etc.



As a waterproof and acid proof roofing, Ruberoid is unapproached. Never leaks. Joints always remain tight. Lasts much longer than tin or iron, is less expensive and requires less care. Does not melt, rot or tear. Light, easily laid.

**P. & B. PRESERVATIVE PAINTS**

received highest award at Buffalo.

Generally adopted for use on iron construction work as a preventive from rust, etc. Equally valuable on wood, stone or brick. A great penetrative. "Bites" right into the pores. Proof against water, acids, alkalies, gases, etc. Never melts, blisters or peels.

**The Standard Paint Company,**

100 William Street,  
NEW YORK. 188-90 Madison Street,  
CHICAGO.

**THE BAILEY-LEBBY CO.  
Machinery and Mill Supplies.**

**FLINTKOTE AND PALMETTO ROOFING,**

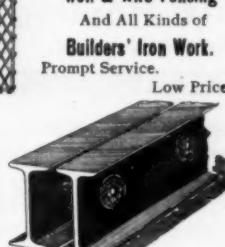
Especially adapted for Factory Buildings, Mill Sheds and Dry Kilns. Not affected by heat or cold. Acid and Fire Proof. Write for Samples and Prices. We make a specialty of Pipe and Fittings. A full stock of Mill Supplies of all kinds.

Try B. L. Co. High Speed Anti-Friction Babbitt for Heavy Service.  
CHARLESTON, S. C.

**IMPROVED WASHERS**

Ore, Elevators, Conveyors, etc.  
McLANAHAN-STONE MACHINE CO.  
Phosphate. HOLLIDAYSBURG, PA.

**WINDOW GUARDS  
AND  
OFFICE RAILING**  
of every description A Specialty.  
ALSO  
Iron & Wire Fencing  
And All Kinds of  
Builders' Iron Work.  
Prompt Service.



Low Prices.  
Headquarters for  
I Beams,  
Girders,  
Columns,  
Sills Etc.

**EUREKA SUPPLY CO.**  
8th and Pine Streets,  
CHATTANOOGA, TENN.

**WIRE RAILING**

AND  
ORNAMENTAL WIRE WORKS.  
DUFUR & CO.

311 North Howard Street, BALTIMORE.

Wire Railing for Cemeteries, Lawns, Gardens, Offices and Balconies; Window Guards, Tree Guards, Wire Cloth, Sieves, Fenders, Cages, Sand and Coal Screens, Iron Bedstead, Chairs, etc.

**H. BALDERSTON & SON,**  
119 Light Street BALTIMORE, MD.

Wire Grating for Windows, Office Railings, Wire Screens for Banks, Churches, and Skylights.

Wire Elevator Enclosures a Specialty.

**The Fred. J. Meyers Mfg. Co.**  
HAMILTON, O.

Manufacturer of Office and Bank Railings. Window Guards of every description, Elevator Cabs and Enclosures, Stable Fittings and Creations, Ticket and Conductors' Fences, Wire Cloth for Coal and Ore Mines.

Send for Catalogue.

**SPENCER & HALL,**  
BALTIMORE, MD.

**Type Founders and Electrotypes**

Write for Special Prices on SPACES and QUADS. We sell them cheap.

**ARTISTIC WIRE WORK**

GRILLS  
BANK & ELEVATOR ENCLOSURES  
DETROIT, MICH.



**WM. INGLIS  
WIRE & IRON WORKS**  
DETROIT, MICH.

MAKERS OF  
ART METAL WORK in Wire, Iron, Brass and  
Bronze. Wire Goods and Wire Cloth.

## When Roofing is Wanted

### Flintkote



### Roofing.

J. A. & W. Bird & Co.

34 India Street,

Boston, Mass.

### PERFECTED GRANITE ROOFING AND SIDING

HEAT, FROST, STEAM AND FIRE PROOF.

#### IT WEARS

better and longer than any roofing on the market. Easily applied. Slightly. Millions of feet in use since 1885 on Roofs of Railroad Buildings and large Manufacturing Plants throughout the United States.

Write for Catalog.

The Eastern Granite Roofing Co.  
GERKEN BUILDING, NEW YORK.

N 936

The Strongest and Most Economical Mortar Colors  
in the Market.

### RED, BROWN, BUFF AND BLACK.

One-half the amount of our MORTAR COLORS will do the work of any other and they are unsurpassed in STRENGTH, FINENESS and BODY. Write for samples and quotations.

CHATTANOOGA PAINT CO.,

CHATTANOOGA, TENN.

We manufacture a superior grade of RED OXIDE OF IRON PAINT for railroad cars, bridges, barns, fences, etc. Sample on application.

### SLATE ROOFS

NAILS and  
CEMENT.

JOHN GALT & SONS,  
253 Broadway, - - NEW YORK,  
814 N. Y. Life Building, CHICAGO.

LOOK THE BEST,  
LAST THE LONGEST.  
Write for Free Book  
and lowest prices.

TOOLS and  
SLATE DRESSERS.

Weather Resisting

#### "MARINE RED"

FOR PAINTING ALL EXPOSED IRON WORK, IRON BOTTOMS OF VESSELS, ETC. It is a perfect paint, drying hard and smooth, giving a fine finish and will outlast any other paint.

We want to quote you prices with sample.

Pinetown Paint & Chemical Co.,

Pinetown, N. C.



### AQUALITE THE LATEST AND BEST COLD WATER PAINT

For Outside and Inside Work.  
Fire-Proof and Weather-Proof.

All the advantages of others, many features exclusively its own.

Columbia Refining Co.  
32 BROADWAY, NEW YORK.

### JOHN W. MASURY & SON.

NEW YORK. HOUSE PAINTS. CHICAGO.

Sold in Paste Form or Mixed Ready for Use. Warranted Strictly Pure Linseed Oil Paints—Nothing better made—THE STANDARD for half a Century.

HOLDT & BULLINGTON,  
SOUTHERN SELLING AGENTS,  
ATLANTA, GA., AND RICHMOND, VA.

### Always in Season.



ALWAYS  
VENTILATING—

Day and Night,  
Rain or Shine.

Improved Design that never  
leak.

Improved Braces that never  
break.

EXHAUSTING MORE AIR THAN ANY  
OTHER VENTILATOR MADE.

Write for Prices.

Pancoast International  
Ventilator Co.

223 and 225 South Fifth Street,  
Philadelphia.



### "DIXIE" Ventilator

(PAT. SEPT. 3, 1901.)

Is Superior to All Others.

Made By  
DOWMAN MFG. COMPANY

Box 282, ATLANTA, GA.

Contractors for Tin, Slate and Galvanized Iron  
Work. Write for prices.

### PAINT.

Litharge Paint is a composition of cremated  
pigments, containing no acids or alkalies. Can  
beat the world for metal house roofs, bridge, iron  
and steel work. Interior and exterior house work. All colors  
Guaranteed will not chalk, crack or peel within five years. No other paint will absorb rust.

THE LITHARGE PAINT COMPANY,  
Factory, 306 N. Holliday St.  
Office, 34 Builders' Exchange, Baltimore, Md.

### For PAINTING MILLS, FACTORIES AND WORKSHOPS

USE ONLY PAINTS BASED ON

### ZINC WHITE.

A pamphlet, "The Paint Question," will  
tell you about it. Send to us for one.

The New Jersey Zinc Co., Empire Bldg., 71 Bdwy., New York.

### MINERAL WOOL

FIRE, SOUND AND VERMIN PROOF INSULATOR.

Samples and Circulars Free.  
U. S. MINERAL WOOL CO., 143 Liberty St., NEW YORK.

The "Lattina" Cellular Tire is Springy, Non-Puncturable,  
and adapted to any kind of vehicle from Automobile to Bicycle. We make it.  
THE RUBBER TIRE CO., Inc., 1215 Market St., Philadelphia, Pa.

## Painting with a Cyclo Painting Machine



reduces the cost of application to a minimum. We guarantee the machine for strength, simplicity and efficiency for applying

### Indeliblo Cold Water Paint,

which is fireproof, washable and weatherproof, and made for both exterior and interior use. It is made in seventeen colors and white, and it will not scale or wash off.

Catalogues, Color Cards and particulars from the manufacturers.

THE MURALO CO.,  
New Brighton,  
Borough of Richmond, N. Y.

## HALF A CENTURY!!!

1902

1852

50 years

has

## EHRET'S SLAG ROOFING



stood the test of time and  
imitation. Its durability is  
unquestioned—we guarantee  
it ten years on any  
kind of a building.  
Applied only by

Send for History to Warren-Ehret Company,

1202 LAND TITLE BUILDING, PHILADELPHIA  
NEW YORK BALTIMORE WASHINGTON  
SCRANTON READING TRENTON

### Don't put a Roof on anything

Until you get  
Samples and Prices  
of our

Portable Asphalt Gravel  
Roofing.

STOWELL MFG. CO.  
JERSEY CITY, N. J.  
114-134 Culver Ave.

It will leave  
money  
in your pockets

### Painting For A Purpose Use

## Colonial Paint

Manufactured by us, has no superior in preventing Rust in Iron or Decay in Woodwork. A perfect covering.

Can be Used in Any Climate. Lasting Qualities. Low in Price.

Allow us to prove how really good this Paint is. Color Card Booklets free.

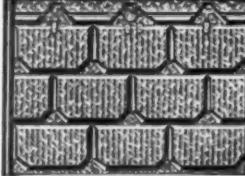
WRITE  
The Colonial Paint & Varnish Co.  
Cleveland, Ohio.

## Galvanized

## Water

## Tight

## Roofs



## OUR EASTLAKE SHINGLE

is absolutely storm-proof. Laid complete without solder. Nail heads covered. Joints cannot break. Provision made for contraction and expansion. See our Catalogue E.

MONTROSS METAL SHINGLE CO., CAMDEN, N. J.

## Roofing, Sheathing, Lining, Building Paper.

Makers of the Celebrated Raw-Hide Water-Proof Papers, Duplex Plaster Board, Standard and Faultless brands of Two and Three-ply Tarred Roofing. Slaters' Felts, Pitch, Coal Tar and its products.

C. S. GARRETT & SON, Paper Makers,

12 and 14 Decatur Street,



RAW HIDE  
WATER PROOF  
PAPER.

## LYTHITE

You know what it is. If you don't, write  
Frank S. De Ronda Co.  
46 Cliff Street. New York.

### AQUARINE. A COLD WATER PAINT.

Best Cold Water Paint Manufactured.

Highest Award at Paris and Buffalo. Outside and Inside  
Use. Will Not Peel or Rub Off.

## MUZZY BROS.

189-191 Main Street—111 Ellison Street, PATERSON, N. J.

## ROOFING

WARREN CHEMICAL & MFG. CO.  
81-83 FULTON ST., NEW YORK.

### BUCK White Lead



STAR  
WHITEWASH  
AND PAINTING  
MACHINES  
—6 Styles and Sizes.—  
to meet all requirements.  
Unsurpassed for efficiency.  
A catalogue for the asking

STAR BRASS WORKS, So'e Makers, Chicago, Ill.

SAMUEL H. FRENCH & CO.

Philadelphia.

Send for prices.



## WATCH

for our advertisement next week,  
but if you want any roofing in  
the meantime, write us.

ASPHALT READY ROOFING CO.

136 Water Street, NEW YORK.

### Prepared Gravel and Slag Roofing

As prepared and applied by our specifications, will give you a perfect roof covering for all your buildings. Compare our roofings with others.

Samples and Catalog for the asking.

Armitage Mfg. Co., Richmond, Va.

SPECIALTIES.—2 and 3-ply Roofing, Insulating, Building and Sheathing Papers, Asphaltum, Pitch, Roof Paints, etc.

### NATIONAL ROOFING & SUPPLY CO.

LOUISVILLE, KY.

Gravel Roofers.

Cement and Asphalt Pavers.

Building Papers.

Two and Three-Ply Ready Roofing.

The Geo. A. Robinson Contracting Company.

Composition and Ready Roofing, etc.

Artificial Stone or any kinds of Paving, etc.

Give us a chance to submit you figures anywhere in this district, either large or small jobs.

110 St. Francis St., MOBILE, ALA.

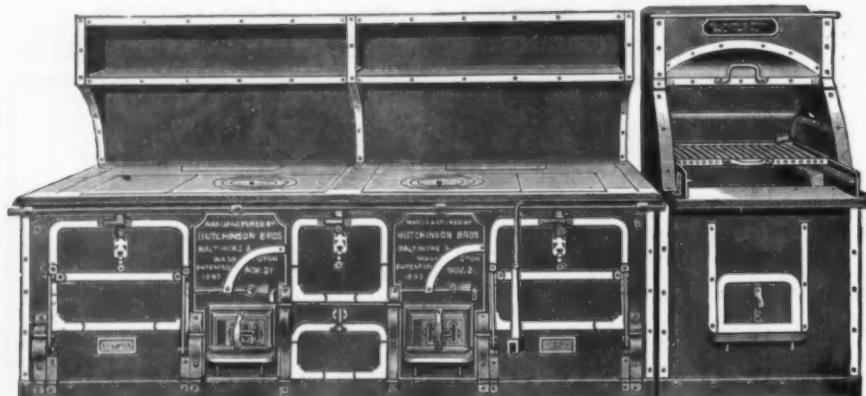
## ZANZIBAR

## ANTI-RUST PAINT

Made in All Colors.  
Made to Endure.

For Structural Iron, Bridges, Roofs, and Exposed Surfaces of All Kinds, the best preservative made. Water-proof, acid-proof, rust-proof. Manufactured only by

THE GARFIELD PAINT CO.,  
Write for Samples. CLEVELAND, OHIO.



**HUTCHINSON BROS.,** **Manufacturers,**  
OFFICE:  
No. 116 N. Howard St., **Baltimore, Md.**

### American Iron and Steel Mfg. Co.

General Offices at Lebanon, Pa., U. S. A.

MANUFACTURERS OF

### MERCHANT BAR IRON AND STEEL (Annual Capacity about 150,000 Tons)

Also Every Variety of

Machine Bolts, Nuts, Washers, Turnbuckles, Lag Screws,

Railway and Dock Spikes, Harvey Grip and Other Railway Track Bolts.

Boiler, Ship and Structural Rivets,

CAR FORGINGS and RODS AND IRONS FOR BRIDGES, BUILDINGS, ETC., ETC.

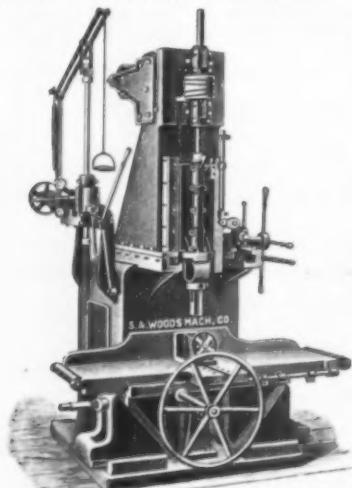
This Company owns and operates the works formerly owned by

J. H. STERNBERGH & SON, Reading, Pa. NATIONAL BOLT, NUT AND RIVET WORKS, Reading, Pa. LEBANON IRON CO., Lebanon, Pa. EAST LEBANON IRON CO., Lebanon, Pa. PENNSYLVANIA BOLT AND NUT CO., Lebanon, Pa.

MURRAY WHEELER, Pres. PHIL WITTMAN, Jr., Mgr. F. TUTTLE, Sec. & Treas.  
ALABAMA IRON WORKS,  
Manufacturers and Repairers of all classes of Saw Mill and Steam Machinery. Boiler Repairs. Saw  
Mill and Steamship Repairs a specialty. Bell Phone 64.  
154 SOUTH COMMERCE STREET.

MOBILE, ALA.

### WOOD WORKING MACHINERY.



NO. 8 VERTICAL HOLLOW CHISEL MORTISER.

**S. A. WOODS MACHINE CO.**

ESTABLISHED IN 1854.

SOUTH BOSTON, MASS.

We Manufacture a Full Line of  
Cross Arm, Insulator Pin and Bracket, and  
Boring Machines, Etc.

CHATTANOOGA MACHINERY CO.

CHATTANOOGA, TENN.

Catalogue mailed free on application.



You never put Washers under  
The Bits on any of the latest up-to-date  
**Shimer Cutter Heads.**

The plan is faulty—always was faulty, because  
you raise the Bit from off its seat after the incline  
of the bolt and you set the Bit from the bolt  
center to the incline face of the gauge, which  
gauges the true position for the Bit only when  
the Bit rests upon its seat.

Send for Catalogue describing our latest Cutter Heads.

**S. J. Shimer & Sons, Milton, Pa.**

**Plow Handle**  
MACHINERY.

Write for Circular and Prices.

B. M. ROOT

YORK, PA.



### For the Best MACHINERY

FOR SHINGLES,

HEADING and STAVES

Veneer Cutters

and Improved

GAUGE LATHES

FOR Turning Handles, Etc.

ADDRESS

Trevor Mfg. Co.

Successors to

TREVOR & CO.

Lockport, N. Y.

### SAW MILLS

are not profitable if you buy a poorly  
built mill or the cheapest mill regardless  
of quality. We have good, cheap mills  
and the best and most accurate mills at  
reasonable prices. It will cost you nothing  
but five minutes' time and a postal  
card to investigate our mills. Give full  
particulars of size mill wanted and we  
will give you low prices. We guarantee  
fully everything we sell. Write us now  
while you have our address.

**SALEM IRON WORKS**  
SALEM N.C. U.S.A.

Subscribe to the Manufacturers' Record.  
Price \$4 a year, or six months for \$2.

**Richard P. Baer & Co.**

Successors to  
**A. I. LYON & CO.**

ROOM 55, MANUFACTURERS' RECORD BUILDING,

N. W. Cor. Lexington and North Sts.,

BALTIMORE, MD.

Millmen with good hardwood lumber to offer for cash are invited to correspond with us.

# FRENCH RANGES

and General Kitchen Apparatus

For

Hotels, Restaurants and Institutions.

Catalogue upon application. Estimates furnished.



### SAWMILL AND ENGINES

A wonderful improvement in Friction Feeds and  
Gig-Back. Back motion of Carriage 3 times as fast  
as any other in the market. Friction Clutch Feed,  
causing all the feed gearing to stand still while back-  
ing. Great saving in power and wear. Catalogue  
and prices free. Also Spring Harrows,  
Cultivators, Corn Planters, Shellers, etc.  
Mention this paper.

**HENCH & DROMGOLD, Mfrs., York, Pa.**

### Standard and Special Wood-Working Machines

of all kinds for Sash, Door and Blind Factories,  
Planing Mills, Car Shops, Furniture Factories, &c.  
Send for Catalog and copy of THE MECHANIC.

**H. B. SMITH MACHINE CO.**  
New York Store, 121 Liberty St. | SMITHVILLE, N. J. | Chicago Store,  
65 S. Canal St.

### DE LOACH MILL MFG. CO.

Manufacturers of  
**High-Grade Mill Machinery,**

ATLANTA, GA., and NEW YORK, N.Y.

**BEACH'S**  
Sawing  
Machinery.

**H. W. BEACH, MONTROSE, PA.**

**THE MILNER & KETTIG CO.**

MANUFACTURERS OF  
Machinery, Mining and  
Plumbing Supplies.

WRITE FOR PRICES.

"Porcupine" Dry Kilns. Birmingham, Ala.

**CAROLINA FIRE BRICK WORKS,**  
KILLIAN, S. C.  
Manufacturers of high-grade  
**FIRE BRICK**

of all shapes and sizes, and shippers of Fire Clay  
and Glass Sand. Correspondence solicited and  
prices quoted delivered anywhere.

**LUMBER**

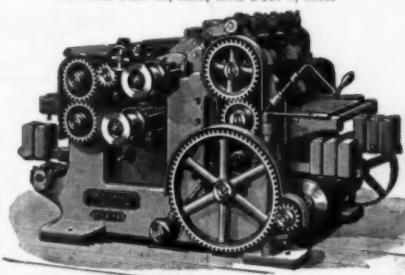
**WALNUT LOGS WANTED.**

# MANUFACTURERS OF WOOD-WORKING MACHINERY.

Here is the Very Latest and Improved Machine for General Planing and Box Factory Work.  
It Contains the Following Advantages:

- st. Power feed with broken rolls, either in two or four sections, and each section is center geared.
- 2d. The lower head comes immediately after the upper, and it will do short as well as long stuff with equal facility.
- 3d. It is simple to operate and is powerful in all its parts and one of the best general Double-Cylinder Surfacers made.

Patented Dec. 19, 1899, and Feb. 6, 1900.



No. 18 DOUBLE CYLINDER SURFACER.

**"Grand Prix"**  
PARIS, 1900.

We shall be pleased to furnish all information and prices on application. Send for New Catalogue.

**J. A. FAY & EGAN CO.**

270-290 W. Front Street.

CINCINNATI, OHIO

**CORDESMAN, MEYER & CO.**

27, 29, 31 Central Avenue, CINCINNATI, OHIO.

FINE GRADES OF LATEST

WOOD  
WORKING  
Machinery

of Every Description.



VARIETY WOOD WORKER.

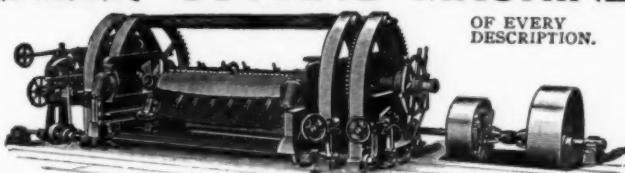
For . . .

Planing Mills,  
Furniture and  
Chair Factories,  
Carriage, Wagon,  
Agricultural  
Works, Etc.

Write for Circulars and  
Prices.

We are Positively Headquarters for Strictly High Grade  
**VENeer CUTTING MACHINERY**

OF EVERY  
DESCRIPTION.



YOU WANT THE BEST. WE HAVE IT.

**THE COE MFG. CO., Painesville, Ohio, U. S. A.**  
ESTABLISHED 1852.

**E. E. TITUS**, Founder and Machinist,

Petersburg, Va.

MANUFACTURER OF LATEST IMPROVED

**Veneer Cutting Machines,**

With Impression Rolls for BASKETS, ORANGE BOXES, ETC., ETC.  
Butter Dish, Berry Box, Fruit Basket, Orange Box, California Grape  
Basket and Truck-Barrel Machinery a Specialty.

CONTRACTS TAKEN FOR COMPLETE OUTFITS.

CABLE "HEALD."

P. O. BOX 202.

**PRICE & HEALD,**

Wholesale Dealers and Manufacturers

**HARDWOODS AND POPLAR**

Sawed or in the Log, for Domestic or Foreign Trade.

Office, Manufacturers' Record Building.

**YARDS, LOCUST POINT.**

Branches, Grafton, W. Va.; Bristol, Tenn.

BALTIMORE, MD.

**THE T. WILCE CO.**

Polished Hardwood Flooring,  
Kiln Dried, Bored and End-Matched.

22d and Throop Streets,

CHICAGO, ILL.

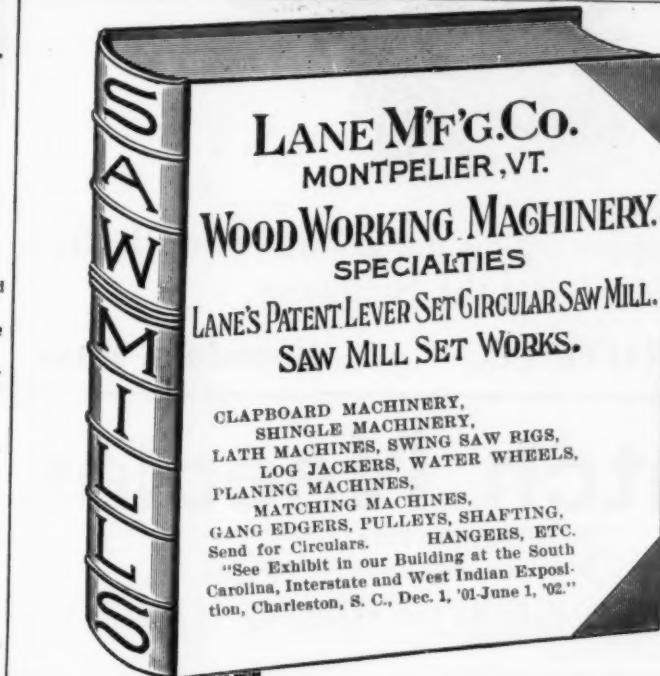
Maple Flooring for Cotton Mills, Factories, Warehouses and Buildings  
for like purposes a special feature.  
Delivered Quotations made to any point in the United States. Write  
for prices and our descriptive Booklet.

**New Orleans  
Wood Preserving Works**

4800  
South Front  
Street,  
New Orleans,  
Louisiana.

The latest improved plant for the  
manufacture and perfect treat-  
ment of Wood with Creosote  
Oil or other preservative. Direct  
shipping and rail connections  
to all points.

**PRICE & COMPANY, BALTIMORE, MD. CLARKSBURG, W. VA.**  
Manufacturers of Oak, etc., For Foreign and Domestic Markets.  
Agents for Pardee & Curtain Lumber Co.'s  
BAND SAWED POPLAR, ASH, WALNUT, CHERRY, ETC.



**LANE MFG. CO.**  
MONTPELIER, VT.

**WoodWorking MACHINERY.**  
SPECIALTIES  
LANE'S PATENT LEVER SET CIRCULAR SAW MILL.  
SAW MILL SET WORKS.

CLAPBOARD MACHINERY,  
SHINGLE MACHINERY,  
LATH MACHINES, SWING SAW RIGS,  
LOG JACKERS, WATER WHEELS,  
PLANING MACHINES,  
MATCHING MACHINES,  
GANG EDGERS, PULLEYS, SHAFTING,  
Send for Circulars. HANGERS, ETC.  
"See Exhibit in our Building at the South  
Carolina, Interstate and West Indian Exposi-  
tion, Charleston, S. C., Dec. 1, '01-June 1, '02."

**WIRT W. HALLAM, Macon, Ga.**

LONG LEAF YELLOW PINE. BRIDGE TIMBERS, HEWN AND SAWN.

Car Timbers, rough or dressed. Heavy Flooring for slow burning con-  
struction. Elevator. Factory and Cotton Mill Bills Furnished Complete.

**ATKINS SILVER STEEL SAWS**

1901—Highest Awards, Two Gold Medals, at the Pan-  
American Exposition, Buffalo, 1901.

Guaranteed the Best  
Circular, Band, Gang,  
Crosscut, Hand, etc.

Write for Prices.

**E. C. ATKINS & CO.**

INDIANAPOLIS, IND.

MEMPHIS, TENN. ATLANTA, GA. PORTLAND, ORE. MINNEAPOLIS, MINN. NEW YORK CITY

We Manufacture  
**Wood Working Machinery**  
Of All Kinds.

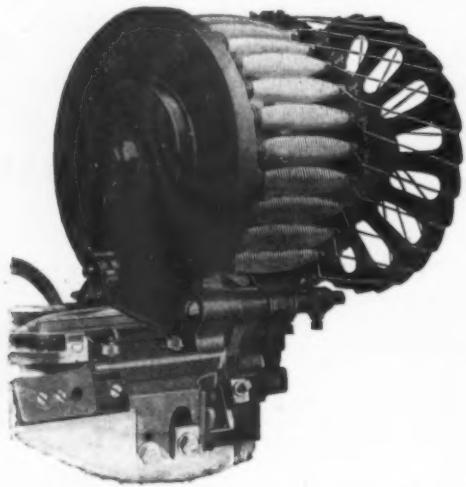
We shall be pleased to send you a copy of our new Catalog if you will write us.

**THE FRANK MACHINERY CO., Buffalo, N. Y.**

Selling Agents—O. L. Packard Machinery Co., Milwaukee, Wis. Curtis & Co.,  
Mfg. Co., St. Louis, Mo. W. T. Adams Machine Co., Corinth, Miss. Greer Machinery  
Co., Knoxville, Tenn. Force & Briggs, Pittsburgh, Pa. Curtis & Co. Mfg. Co., Chicago,  
Ill. Geo. E. Lum Machine & Supply Co., Birmingham, Ala. Northern Machinery Co.,  
Minneapolis, Minn.

For information about the  
**KNITTING BUSINESS**  
 Write McMICHAEL & WILDMAN MFG. CO., Norristown, Penna.

## A NEW HOPPER For The New Century.



The Hopper makes the Loom. Note the Size and the Simplicity.

**THE DRAPER CO.,** Hopedale, Mass.

## Latch Needles

OF SUPERIOR QUALITY  
 FOR ALL MAKES OF MACHINE.

**MAYO KNITTING MACHINE AND NEEDLE CO., FRANKLIN, N. H.**

Philadelph'ia Office,  
 Knickerbocker Building,  
 Cor. 6th and Arch Streets.

See large advertisement first issue of each month.

## The Latest and Best

Looms, Harness Motions and Dobbies,  
 Beaming, Spooling, Winding, Dyeing and  
 Sizing Machinery, Power Transmitting  
 Machinery, Freight Elevators.

**FAIRMOUNT MACHINE COMPANY,**  
 Twenty-Second and Wood Streets, - PHILADELPHIA, PA.

## KNITTING MACHINERY.

**SCOTT & WILLIAMS,**

2079 E. Cumberland St.,

PHILA., PA., U.S.A.

Write for Catalogue.

## Hydraulic

## Cotton Presses

They are the **BEST BALING PRESS MADE** For Cotton, Wool, Rags, etc.  
 Also Cotton-Seed Oil Mills, Threshers and Cleaners. Full information upon application.

**THE CARDWELL MACHINE COMPANY,**

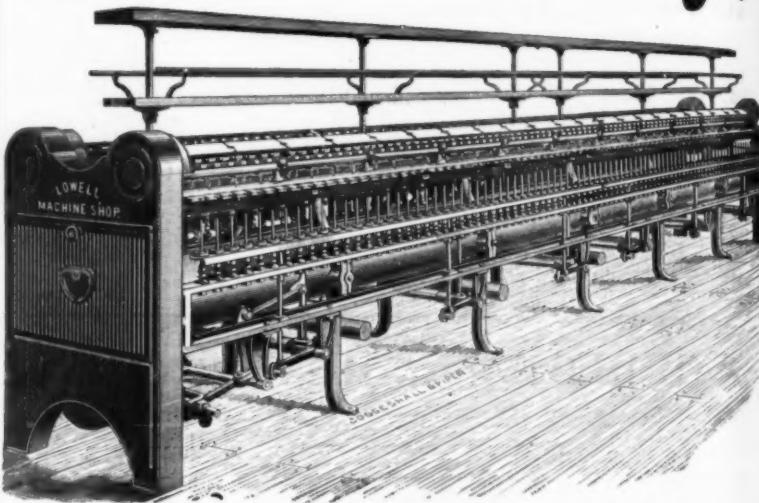
RICHMOND, VA.

**KILBURN-LINCOLN & CO., FALL RIVER, MASS.**  
 LOOMS FOR PLAIN AND FANCY WEAVING.

The Kilburn-Lincoln High-Speed Loom is the Result of over fifty years' experience in Loom Building.

**LOWELL MACHINE SHOP**  
 LOWELL, MASS.

## Cotton Machinery,



Cards, Railway Heads, Drawing Frames, Fly Frames, Ring Frames, Spoolers, Warpers, Slashers, Looms, Twisters, Reels and Cloth Room Machinery.

## Carver Machinery

used by **90% of all OIL MILLS.**

We make: **COTTON SEED LINTERS, COTTON SEED HULLERS, COTTON GINS, SAW FILING MACHINES, SAW GUMMERS, COTTON SEED FEEDERS.**

## CARVER COTTON GIN CO.

EAST BRIDGEWATER, MASS., U. S. A.



**O. A. ROBBINS,**  
ENGINEER.  
 Machinery and Equipment for Cotton Mills.

OFFICE: Cor. 4th and Tryon Sts., CHARLOTTE, N. C.

**A. H. WASHBURN,**  
 SOUTHERN AGENT  
**SACO & PETTEE MACHINE SHOPS**  
 Everything needed for the Complete Equipment of COTTON MILLS to Manufacture  
 Yarns and Woven Fabrics of all Kinds.  
 CHARLOTTE, NORTH CAROLINA.

## THE SPARTANBURG LOOM-HARNESS CO.

MANUFACTURERS OF  
 Double and Single-Knot Harness.

ALL GOODS GUARANTEED.

SPARTANBURG, S. C.

KLAUDER-WELDON

**DYEING MACHINE CO.**  
 Machine Sent on Trial to Any Mill South.

AMSTERDAM, N. Y.

# AMERICAN SUPPLY CO.,

Manufacturers of

Loom Harness, Weaving  
Reeds, Oak-Tanned Leather  
Belting, Loom Strapping,  
Pickers, Etc., Etc.

Wholesale Dealers In

## Supplies

for Cotton and Woolen Mills.

### AMERICAN SUPPLY CO.,

Providence, R. I.

If you want any of the following, it will pay you to  
write for prices:

COTTON HARNESS,  
HARNESS FRAMES,  
COTTON REEDS,  
WOOLEN REEDS,  
WIRE HEDDLES,  
JACQUARD HEDDLES,  
TEMPERED STEEL HEDDLES,  
SPINNING RINGS,  
RING TRAVELERS,  
COP SHUTTLES,  
BOBBIN SHUTTLES,  
SHUTTLE SPINDLES,  
SHUTTLE SPRINGS,  
BOBBINS,  
WARPING SPOOLS,  
JACK SPOOLS,  
SKEWERS,  
COP TUBES,  
HARNESS EYES,  
HARNESS HOOKS,  
STRAP HOOKS,  
JACK HOOKS,  
GUIDE WIRES,  
YARN REELS,  
YARN SCALES,  
YARN TESTERS,  
ROVING REELS,  
ROVING CANS,  
ROVING TRUMPETS,  
ROVING GUIDES,  
CARD CLOTHING,  
CARDERS' TOOLS,  
REED HOOKS,  
WEAVER COMBS,  
COMB PLATES,  
LEATHER BELTING,  
SOLID ROUND BELTING,  
TWIST LEATHER BELTING,  
RUBBER BELTING,  
COTTON BELTING,  
CANVAS BELTING,  
GANDY BELTING,  
LACE LEATHER,  
BELT HOOKS,  
CANVAS STRAPS,  
TICKING STRAPS,

LEATHER STRAPPING,  
LOOM PICKERS,  
RAWHIDE PICKERS,  
PICKER LOOPS,  
PICKER STICKS,  
ROLLER SKINS,  
ROLLER CLOTH,  
ROLL COVERERS' TOOLS,  
RUSSIA ISINGLASS,  
AMERICAN ISINGLASS,  
GLUES,  
WINDING LEATHER,  
VENICE TURPENTINE,  
CLEARER CLOTH,  
SLASHER CLOTH,  
ASH BASKETS,  
RAWHIDE BASKETS,  
LEATHEROID BASKETS,  
BROOMS,  
MILL BRUSHES,  
DRUM BANDING,  
SPINDLE BANDING,  
BRAIDED BANDING,  
LOOP BANDING,  
LOOM FORKS,  
CRAYONS,  
OIL CANS,  
OIL CABINETS,  
OIL TANKS,  
FIRE PAILS,  
FIRE-PAUL HOOKS,  
HOSE,  
HOSE PIPES,  
HOSE SPANNERS,  
FIRE AXES,  
CHUCKS,  
DRILLS,  
TAPS,  
SCREW PLATES,  
VISES,  
WRENCHES,  
FILES,  
EMERY,  
EMERY CLOTH,  
SANDPAPER,  
TAPES,  
CHAIN HOISTS,

And Any Article Used in Cotton or Woolen Mills.

### Columbia Mill Supply Co.

COLUMBIA, S. C.

Special attention given to estimates furnished on  
Complete Equipment Supplies for

### COTTON and WOOLEN MILLS,

Automatic Sprinklers, Hot Water Heating,  
Steam and Ventilating Systems.  
Send Specifications.

Large Stock. Prompt Shipments.  
Office and Warehouses, 802 to 806 Gervais St.

W. H. GIBBES & CO.  
Try "Columbia" Anti-Friction Metal.

### SHERWOOD BOBBIN AND MFG. CO.

Greensboro, N. C.

MANUFACTURERS OF

Speeder, Slubber, Intermediate and Twister Bobbins, Skewers, Spools, Spool Skewers and Clearer Rolls.

NYE & TREDICK,  
Circular Rib Knitting Machinery

For Underwear, Combination Suits, etc., Men's Underwear, Sweaters and Hosiery.

505 Arch Street, PHILADELPHIA, PA.

**SAVOGRAN** KEEPS FLOORS AND SURFACES CLEAN

INDIA ALKALI WORKS, 28-37 India Wharf, BOSTON.

"26 years at it."

### EXCELSIOR KNITTING MACHINE MFG. CO.

BUILDERS OF

#### KNITTING MACHINERY.

#### Two-Feed $\frac{3}{8}$ Auto.

FOR  
LADIES'  
STRING WORK,  
ALSO  
BLACK LEGS with  
WHITE FEET.

#### Regular $\frac{3}{8}$ Auto.

FOR  
ALL CLASSES OF  
COTTON HOSE.

#### Special $\frac{3}{4}$ Auto.

FOR  
WOOL.

Excelsior Knitting Mch. Mfg. Co.

Allentown, Pa., U. S. A.



### Steam Jacket Kettles

Guaranteed to stand 150 pounds  
cold-water test.  
Equal, if not superior, to any in  
the market.

Established 1841.

### E. B. Badger & Sons Co.

COPPERSMITHS,  
63-69 Pitts Street, BOSTON, MASS.

### Cottonseed Oil Machinery.

Tobacco Cutting Machinery.

### Brass Goods

FOR ENGINE BUILDERS, STEAM, WATER AND GAS FITTERS.

Write for Catalogue.

### BUCKEYE IRON & BRASS WORKS,

DAYTON, OHIO, U. S. A.

### Weigh Rice by Machine.

Can we send you circular?

OUR Machine is Extensively Used by the Most

Progressive Rice Mill's South.

### Automatic Weighing Machine Co.

275 Congress Street, BOSTON, MASS., U. S. A.

### The Textile Mill Supply Co.

CHARLOTTE, N. C.

"EVERYTHING IN MILL SUPPLIES."

Special Attention Given to the Complete Equipment of Supplies for Cotton Mills.

### Mercerizing Machinery for Skein and Warp.

Pressed Steel Automatic Tenter Clip. Winding, Measuring and Folding Machinery. Special Machinery to Order.

PHILADELPHIA TEXTILE SPECIALTY MACHINE CO.

500 N. 12th Street, PHILADELPHIA, PA.



# Cottonseed Oil Machinery.

(Not in any Combination or Trust.)

## Modern Ginning Systems.

Write for Catalogue.

**E. Van Winkle Gin & Machine Works,**  
Atlanta, Georgia, U. S. A.  
Local Oil Mills and Ginneries Combined.

## HYDRAULIC PRESSES.

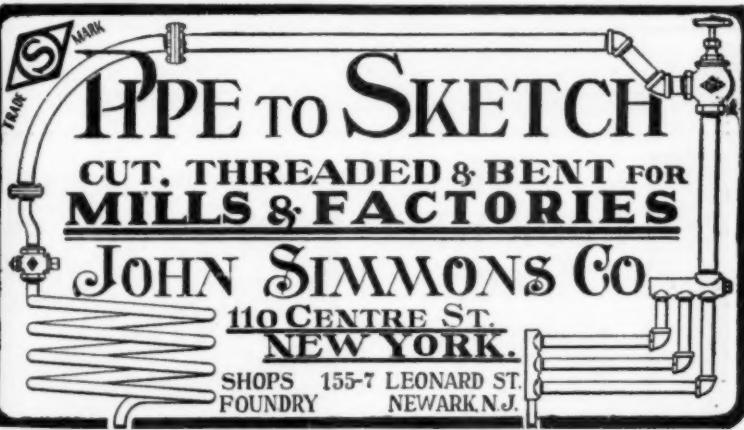


Pumps, Accumulators, Intensifiers, Valves, Etc.

**WATSON-STILLMAN CO.**

204-210 East 43d Street.

NEW YORK



**BUYERS** of Machinery, Tools, Mining and Manufacturing Supplies can find anything they need by referring to the advertising pages of the MANUFACTURERS' RECORD.

**SELLERS** of anything that is required by Machinists, Foundrymen, Iron Manufacturers, Coal and Iron Ore Miners, Textile Manufacturers, Woodworkers and Artisans of every class can reach more customers through the MANUFACTURERS' RECORD than in any other way.

BALTIMORE, MD.

## TANKS.

Girard, O.

## STAND Pipes.

Girard Boiler & Mfg. Co.

## Corrugated Galvanized Steel TANKS

FOR FUEL OIL, PETROLEUM OIL WELLS, FACTORIES, ETC.  
Also CISTERNS for under or overground use. Our work guaranteed. Write

**HARRY BROS. CO.** 240 Pacific Ave., DALLAS, TEX.

231 Fannin St., BEAUMONT, TEX.

## GALVANIZED IRON STORAGE TANKS

From 10 gals. to 7,000 gals. Black iron tanks any size. GAS ENGINES from  $\frac{1}{2}$  H. P. up. For particulars address

**Clarendon Boiler Works,**

N. Clarendon, Pa.

Mention this paper.

## TANKS

We manufacture all kinds and sizes of **Cypress Tanks**.

Write for Catalogue.

**G. M. DAVIS & SON,**

PALATKA, FLA.

**ATLANTIC TRANSPORT LINE,**  
NEW YORK, PHILADELPHIA and BALTIMORE to LONDON direct.

	Tons.	Tons.	
S.S. Minnehaha,	15,000	S.S. Michigan,	14,000
S.S. Minneapolis,	15,000	S.S. Mackinaw,	5,500
S.S. Marquette,	10,000	S.S. Maryland,	4,000
S.S. Menominee,	10,000	S.S. Minnesota,	5,500
S.S. Mesaba,	10,000	S.S. Montana,	4,000
S.S. Manitou,	10,000	S.S. Mohawk,	5,000
S.S. Manhattan,	13,000		

## ATLANTIC TRANSPORT CO.

Continental Trust Building, Baltimore.  
New York, 1 Broadway. Chicago, 234 La Salle St. Phila., 511 Bourse. London, 108 Fenchurch St.

## CHESAPEAKE STEAMSHIP COMPANY.

"Chesapeake Line."—Passenger steamers AUGUSTA and ATLANTA for Old Point Comfort and Norfolk, Va. Steamers leave Baltimore daily (except Sunday) at 6:30 p. m., and arrive Old Point Comfort 6 a. m. and Norfolk 7 a. m., where connection is made with rail lines for all points South and Southwest.

"York River Line."—United States Mail and Passenger Steamers CHARLOTTE and BALTIMORE for West Point and Richmond, Va.

Steamers leave Baltimore Tuesday, Thursday and Saturday at 5 p. m. Piers 18 and 19 Light St. Wharf, and arrive West Point at 7:30 a. m. and Richmond at 9:12 a. m. Landings on York River will be made at Gloucester Point, Clay Bank and Almond's in each direction, weather permitting. Through tickets to all points can be secured, baggage checked and staterooms reserved from the City Ticket Offices, Nos. 109, 120 and 127 East Baltimore Street, or the General Offices, 530 Light Street, Baltimore, Md.

## Merchants & Miners' Transportation Company's

### STEAMSHIP LINES.

For BOSTON and the EAST—Every Tuesday, Thursday, Friday and Sunday at 6 P. M. For PROVIDENCE and the EAST—Every Monday, Thursday and Saturday at 6 P. M. For SAVANNAH and the SOUTH—Every Tuesday, Thursday and Saturday at 6 P. M. For NEWPORT NEWS and NORFOLK—Daily, except Wednesday, at 6 P. M.

Accommodations and Cuisine Unequalled.

Freight handled with care and dispatch.

C. R. GILLINGHAM, Agent, Long Dock.

A. D. STEBBINS, A. T. M.

W. P. TURNER, G. P. A.

J. C. WHITNEY, T. M.

General Offices—214 E. GERMAN STREET.

## BALTIMORE STEAM PACKET CO.

### OLD AND RELIABLE

## BAY LINE.

### CARRYING U. S. MAIL.

Elegant Steamer Dally, except Sunday, from "BAY LINE" PIERS, 10-13 LIGHT STREET, at 6:30 P. M., for OLD POINT COMFORT, NORFOLK, PORTSMOUTH AND ALL POINTS SOUTH. Connect at Old Point Comfort, Va., with C. & O. R. R. for Richmond. Connect at Portsmouth with Seaboard Air Line, solid train Portsmouth to Atlanta. At Norfolk, connect with Atlantic Coast Line, Norfolk & Carolina, Norfolk & Southern and Norfolk & Western Railroads, and with Old Dominion Line for New Bern and Washington, N. C.

Meals on the European plan. Luxurious Staterooms. Electric Lights, Steam Heat. Berths Free. Reserve staterooms in advance at Bay Line Ticket Office, 108 East Baltimore Street; also at Albaugh's, 15 N. Charles St. Telephone C. & P. 1435; Maryland, Courtland 485.

EMMET BROWN, General Ticket Agent.

W. RANDALL, General Fgt. and Pass. Agt.

JOHN R. SHERWOOD, V.-P. and Gen. Mgr.

It would pay every town and every property-owner and agent in the South to advertise in the SOUTHERN FARM MAGAZINE. It is published by the Manufacturers' Record Publishing Co., Baltimore.

## FIRE PROTECTION

FOR

Oil Mills, Cotton and Woolen Mills  
and manufacturers of all kinds secured  
by using a

## Caldwell TANK & TOWER

Strength  
Guaranteed.  
Customer  
Can Erect.

Well Proportioned  
and Sightly. Thoroughly acceptable  
to the best Insurance Companies.  
Send for Illustrated Catalogue, prices  
& list of customers.

**W. E. CALDWELL CO.,**  
3300 Brook St., Louisville, Ky.



## TANKS

made of CYPRESS, OAK, YELLOW PINE or TUPELO at lowest prices. We are the largest exclusive Tank Manufacturers in the world.

Address GULF CYPRESS LUMBER & TANK CO. Box E, Mt. Vernon, Ala., U. S. A.

CEDAR AND CYPRESS VATS, TANKS, DYE TUBS, ETC. and everything in the shape of a tank. 8 WOOLFORD WOOD TANK MFG. CO. Office, Real Estate Trust Bldg. S. E. Cor. Broad & Chestnut. PHILADELPHIA. Works, Darby, Pa., T. W. & R. R.

CYPRESS WATER TANKS. Best in the world. Send for catalogue. Write for delivered prices. H. F. LEWIS & CO., Ltd. 316 Baronne St. NEW ORLEANS, LA.

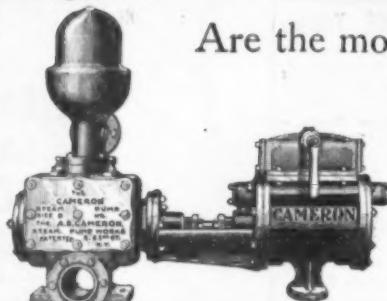
## Paddle Wheel Machinery

Our knowledge of river navigation is earned through long experience and exceptional opportunity. We design and build the entire and complete outfit of driving machinery for powerful light draft vessels, having the best of modern shop facilities to aid us in doing all the work. Write to us before you act.

## MARINE IRON WORKS

Station A. CHICAGO.

# CAMERON STEAM PUMPS



Are the most durable, most effective and economical.

Not having any outside valve gear, they are the best for  
Boiler Feeding, Mines, Refineries, Breweries, Tanneries, Irrigating,  
Fire Purposes, Railroad and Filling Tanks.

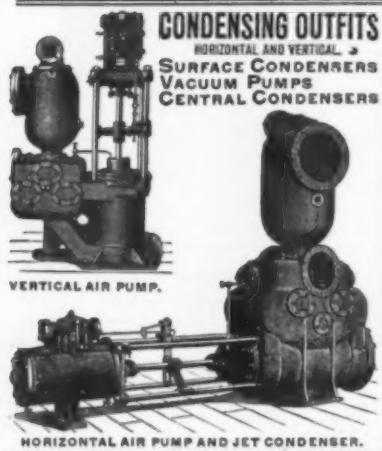
You ought to know more about them by consulting our 112-page catalogue.

A. S. CAMERON STEAM PUMP WORKS,

Foot of East 23d Street, NEW YORK.

## A DAM THAT WILL DAM

BEARDSLEY GRAVITY DAM AND CONSTRUCTION CO., Dam Builders and Hydraulic Surveyors, etc., ELKHART, IND.



DEAN BROS. STEAM PUMP WORKS  
INDIANAPOLIS, IND.

Boiler Feeders, Fire Pumps, Single and Duplex Pumps



### THE NEW Pulsometer STEAM PUMP.

The Simplest, Cheapest,  
Most Efficient, Most Durable  
Shallow Mines,  
Coal Washing,  
Ore Washing,  
Dip Drainage,  
Contractors' Use.  
Send for Catalogue A-1

PULSOMETER STEAM PUMP WORKS,  
125 Greenwich St. NEW YORK.

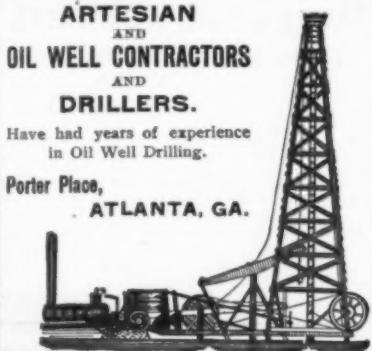


### PERRY ANDREWS & BRO.

ARTESIAN  
AND  
OIL WELL CONTRACTORS  
AND  
DRILLERS.

Have had years of experience  
in Oil Well Drilling.

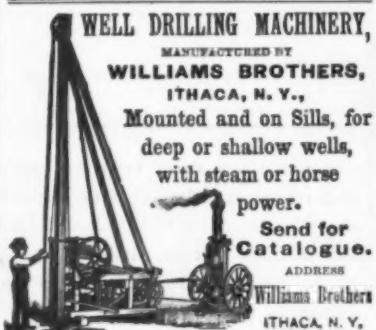
Porter Place,  
ATLANTA, GA.



### Artesian Wells and Water Supply.

FOR  
CITIES and TOWNS,  
Breweries,  
Manufactories,  
Cemeteries,  
Farms,  
Residences.  
Drilled Wells,  
Driven Wells.

F. M. GOULD,  
3417 E. Clay St.  
Richmond, Va.



### GOODSELL'S "98" & PUMP PACKING



WAX END SEWED.



### THE COOK WELL ...CO...

ST. LOUIS, MO., U. S. A.

Cook's System of Wells  
FOR  
Cities, Towns, Villages, Railroads,  
Ice Plants, Breweries and  
Manufacturers.

Cook's Patent Brass Tube  
Well Strainer.

Cook's Deep Well  
Pumping Engines.

Estimates furnished upon application. Write for Catalogue and Prices.

### ERIE PUMP & ENGINE CO. Erie, Pa., U. S. A.

### VERTICAL ENGINES, CENTRIFUGAL PUMPS,

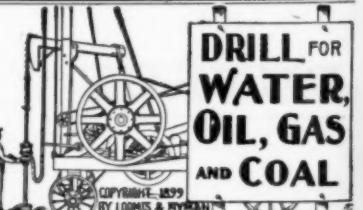
Horizontal, Vertical, Direct  
Connected. Write for prices.



WEARING EDGE absolutely  
invincible against splitting.  
Cannot be separated in service.  
Equal to two and frequently four  
sets of best grade, fine Pump Packing;  
Suited for hot or cold service.  
All sizes in coils of 15 lineal feet.  
Used in United States NAVY.

GOODSELL PACKING CO.,  
Sole Makers,  
33 S. Canal St., CHICAGO, ILL.

MASON  
GOVERNORS  
SHOULD BE ATTACHED TO  
FIRE & ELEVATOR  
PUMPS  
TO INSURE PERFECT REGULATION  
THE MASON REGULATOR CO.  
BOSTON MASS. U. S. A.



Use our machinery! It is the strongest. It takes  
the least power. Carries the heaviest tools. Drills  
much faster. Lasts longer and makes the owner  
more money than any other Drilling Machine on  
earth. Machines made for drilling any depth or  
diameter, and for Horse, Steam or Gasoline Power.

LOOMIS & NYMAN, TIFFIN, OHIO.

Get the Latest Improved  
DEEP WELL  
Pumping Machinery

which saves you 4-5  
of fuel over the Air  
Lift System.

STEAM AND POWER PUMPS,  
of large capacity.  
Write us.

DOWNEY PUMP CO., Downieville, Pa.

CONTRACTOR'S HAND  
PUMPS.

EDSON MFG. CO., BOSTON, MASS.



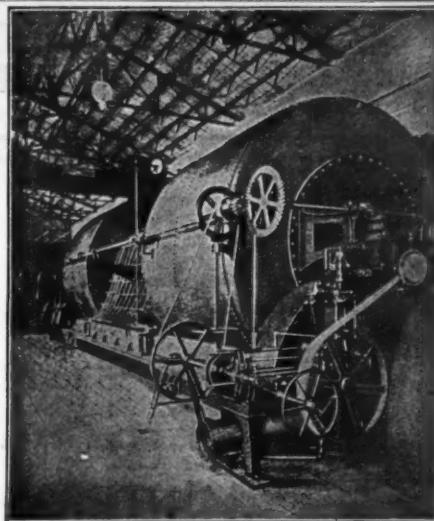
Pair McCormick Turbines operating generators in the power plant of the Boston & Montana Consolidated Copper & Silver Mining Co., Great Falls, Mont. Head 40 feet, 2800 horse power, weight 300,000 lbs., irrespective of power connections, draft tube or supply pipes. **The heaviest pair of Turbines built.**

These Turbines were tested at 1000 rpm and gave 85 per cent. efficiency.

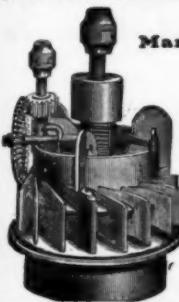
# McCormick Turbines.

If you are interested, let us send you our Catalogue and refer you to some of our latest plants.

**S. MORGAN SMITH CO.**  
Hydraulic Engineers and Machinists,  
York, Pa., U. S. A.



RISDON-ALCOTT TURBINE CO., Mount Holly, N. J., U. S. A.



Manufacture

## Turbines

to meet all conditions, either on a vertical or a horizontal shaft. Possessing high speed, great wearing qualities and easy to control. Adapted for any water power.

**Risdon Cylinder and Register Gate Turbines**  
Total in Full Gate  $\frac{1}{16}$   $\frac{1}{8}$   $\frac{1}{4}$   $\frac{1}{2}$  Average  
Holyoke Flume:  $\frac{1}{16}$  .8694 .8472 .8014 .7801 .8195

**Alcott's High-Duty Turbine,**  
High Efficiency, Easy Working Gate, Simple, Durable.

**Taylor Sleeve-Gate Turbine,**

Largest Power ever obtained from a wheel of the same dimensions. Are manufactured solely by us. If interested let us tell you more about them

# SAMSON TURBINE



For Heads of 3 Feet and Upward  
UPRIGHT and HORIZONTAL.

ADAPTED TO

COTTON MILLS AND POWER PLANTS.

SPECIAL FEATURES:

High Speed and Efficiency, Great Strength. Close Regulation and Steady Motion. Balanced Gates. Built for direct Couple. Belt or Rope Drive.

Write for pamphlet, stating your Head and Power required.

AUTOMATIC AND THROTTLING ENGINES PORTABLE AND STATIONARY BOILERS

Built in a variety of sizes. State kind of work and power required, and send for pamphlet H.

**JAMES LEFFEL & CO.,** P. O. Box 103, Springfield, Ohio, U. S. A.

## Water Supply Outfits



FOR AUTOMATIC SPRINKLER, VILLAGE, RESIDENCE AND RAILROAD PURPOSES. Galvanized Steel and Wood Substructures.

Tanks Cypress, Pine or Galvanized Steel.

Bell Towers, Flag Towers,

Iron Pumps and Cylinders.

STAR WIND MILLS,

Galvanized Steel or Wood, adapted for Residences, Power or Irrigating Purposes. Designs and Prices Furnished. Write for Catalogue.

ORNAMENTAL

**Flint & Walling Manufacturing Company,** MUNICIPAL 516 OAK STREET, KENDALLVILLE, IND.



### Our Specialties:

CAST IRON PIPE, all kinds and sizes, Fire Hydrants, Gate Valves and Valve Indicator Posts, Hydraulic Tools, Steam Pumping Machinery, Gas Holders, etc. Gas Power Plants with Producers.

See Special Catalogue.

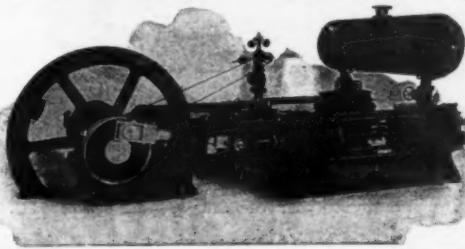
**R. D. WOOD & CO.,**  
400 Chestnut Street, Philadelphia.

## SMITH-VAILE Air Compressors

Straight line and Duplex types, Single and Multiple Stage Compression; Steam actuated with simple or compound steam cylinders, or belt driven, for **PUMPING DEEP WELLS**, Elevating Fluids, Pneumatic Tools, Mining purposes, Hoists, etc.

We build a full line of **CONDENSING APPARATUS**, including **JET** and **SURFACE** **CONDENSERS**,

**VACUUM PUMPS**, also Steam and Power PUMPS, for Boiler Feeding, Fire Purposes, Breweries, Mines, Filling Tanks, etc., OIL MILL MACHINERY AND FILTER PRESSES.



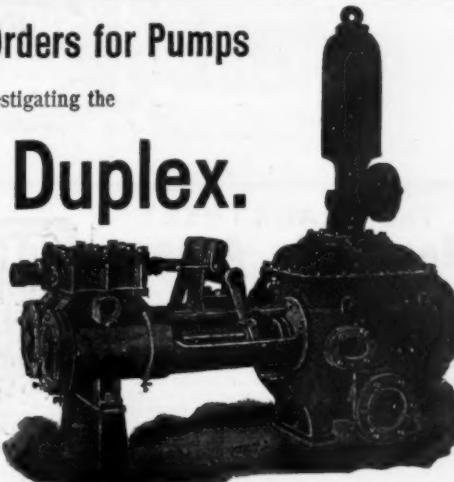
**The Stilwell-Bierce & Smith-Vaile Co.**

261 LEHMAN ST., DAYTON, OHIO, U. S. A.

## Don't Place Your Orders for Pumps

without first investigating the

## Gardner Duplex.



The more searching the investigation, the more favorable for our pumps. Abundant reasons why **GARDNER PUMPS** will be the best for you. Address

**THE GARDNER GOVERNOR CO., (P. B. 12), QUINCY, ILL.**

**CAST IRON PIPE**

**The Dimmick Pipe Co.**  
Makers of **VALVES** and **HYDRANTS**. Special Castings of Every Description, Birmingham, Ala.

New York, 29 Broadway. Philadelphia, 1061 Drexel Bldg.  
Chicago, 1200 Fisher Bldg. St. Louis, 20 Equitable Bldg.  
San Francisco, 31 New Montgomery St. Pittsburg, Empire Bldg.  
228 Equitable Bldg., Atlanta, Ga.

**UNITED STATES CAST IRON PIPE & FOUNDRY COMPANY.**

Railroad and Township Culverts, Flange Pipe and Special Castings of every description.

**CAST IRON PIPE**

MANUFACTURERS OF  
All Sizes, 3 to 72 inch Internal  
Diameter.

Gen. Offices, Chicago, Ill. Eastern Offices, Phila.

Southern Offices, Chattanooga, Tenn.

**FIRE HYDRANTS,  
STOP VALVES,  
GENERAL  
FOUNDRY WORK**

**THE G. MORGAN  
PIPE & FOUNDRY CO.**  
LYNCHBURG, VA.



Flood Building, San Francisco, Cal.

Highest Award for Pipe Wrenches.  
Atlas Pipe Wrenches receive HIGHEST AWARD at Pan-American Exposition. If you are not using the "ATLAS" (the Pipe Wrench with the three-slot adjustment) give it a trial and we believe you will be satisfied. Made in four sizes: 10 in., 18 in., 24 in. and 36 in., handling everything from  $\frac{1}{8}$  in. wire to  $\frac{1}{2}$  in. pipe.

Ask your supply man for the

"ATLAS," manufactured by

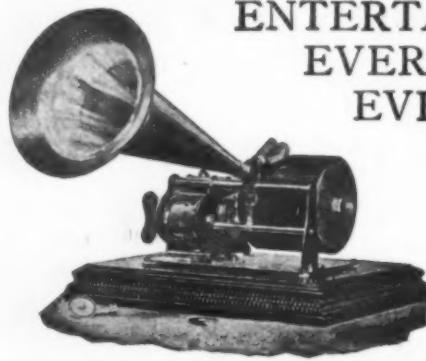
Atlas Pipe Wrench Company,  
121 Liberty Street, New York.

## THE Graphophone

Prices \$5 to \$150.

Awarded the Grand Prize at the Paris Exposition

ENTERTAINS  
EVERYBODY  
EVERWHERE

Type AB, using BOTH large  
and small Records.

Price

\$25.00

### LATEST NEW PROCESS RECORDS.

Grand Records, \$1 each. Small Records, 50¢ each. \$5 per dozen.

Send for Catalogue.

Send \$5 with your order and goods will be shipped C. O. D. for the balance.

### Columbia Phonograph Company

Baltimore—

110 E. Baltimore St.

Washington—

919 Pennsylvania Avenue.



N.E. Cor. Baltimore and North Sts.

### The BRADSTREET Mercantile Agency,

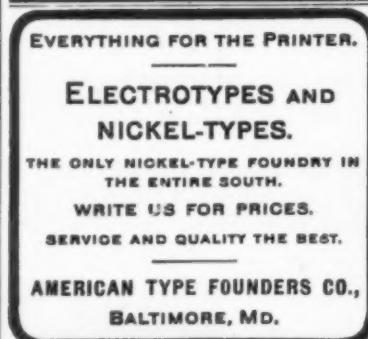
ESTABLISHED IN 1849,

Is the oldest and financially the strongest organization of its kind, working in one interest and under one management, with more capital invested in the business, and expends more money every year for the collection and dissemination of its information than any similar institution in the world. Its reports are considered in the light of a guide by both investors and those contemplating the granting of credit. In addition to a large corps of skilled employees, more than one hundred thousand correspondents contribute the result of their investigation and opinions. Subscriptions are annual and may commence at any time the subscriber elects. Details as to prices and terms will be furnished upon application.

CHARLES F. CLARK, President,

346-348 Broadway, New York.

Baltimore Office:  
Continental Trust Bldg., Calvert and Baltimore Sts.  
EDWARD S. STROHAR, Supt.



### Quaint, Historic New Orleans.

Land of Sunshine and Flowers, Music and Song. The Most Popular  
Winter Resort in America.

French Opera, Hunting, Fishing, Golf, Continuous Horse Racing.

### The New St. Charles Hotel.



The latest and one of the largest and  
best in the country, and the only absolutely  
fire-proof hotel in the city.

#### Accommodations for 700 Guests.

Turkish, Russian and Roman Baths,  
200 Private Bath Rooms.

#### Distilled Drinking Water. Distilled Water Ice.

A modern first-class Hotel. Kept on  
both American and European Plans, at  
moderate prices.

### A. R. Blakely & Co., Limited, Proprietors.



### Post Hammers.

For Operation by Steam or Compressed  
Air. Falling weight 100 lbs.

Adapted for general use in Machine and Blacksmith Shops. At all times under complete control of operator.

Steel or Wrought Pipe Columns furnished when desired.

AMERICAN ENGINEERING WORKS,

204 Dearborn St.,

CHICAGO.

This space is reserved for  
M. L. HIMMEL & SON,  
BALTIMORE, MD.  
Largest manufacturers in United States of  
Desks and Office Fixtures.  
Write for Catalogues.

### TO Real Estate Agents:

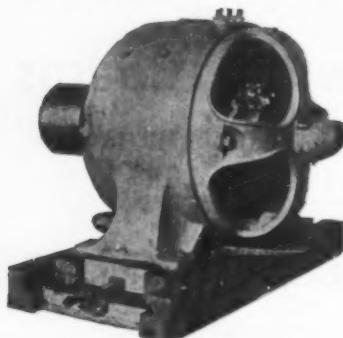
Do you own a farm? The question is pertinent because a great many Real Estate Agents even in the cities, and more largely of course in the towns, are owners of farm property. In many cases it is an incumbrance instead of a profitable asset. Or even if it yields a revenue this might be made larger. If you have any such interest as this in farming, stock raising, fruit growing, or any agricultural pursuit, don't you think you might find some valuable and helpful suggestions and ideas in a high-class periodical of Southern agriculture, such as the Southern Farm Magazine? It is only a dollar a year. Don't you want it? Published by Manufacturers' Record Publishing Co., Baltimore.



Complete Lighting, Power  
and Railway Plants.

BELTED AND DIRECT CONNECTED GENERATORS AND MOTORS.  
LATEST DESIGNS. HIGHEST EFFICIENCY.  
**TRIUMPH ELECTRIC COMPANY,**  
CINCINNATI, OHIO.

# THE GENERAL ELECTRIC COMPANY'S

C. E. MOTOR,  
For Lighting or Power Circuits.

Sales Offices in All Large Cities.

## Small Motors for Small Tools

### Save Shafting and Belting.

Run one machine or a dozen—the power paid for is exactly proportional to the work done. When work on a machine stops its power expense ceases.

**General Office: SCHENECTADY, N. Y.**

**Motors.**

**COMMERCIAL ELECTRIC COMPANY,**  
INDIANAPOLIS, IND.

**DYNAMOS.**



SHELBY LAMPS

## We do it with the Coils

### USEFUL LIGHT.

YOU want the light most on the objects below the lamp. Anchored Lamps measure 16 C. P. from the sides; 7 C. P. from the end. Shelby Lamps measure 16 C. P. from the sides, but 14 C. P. through the ends. Light travels in straight lines. The Lamp above the object illuminates the object with the light from the end. **100 per cent. more useful light.** Long life guaranteed. Send us an order for 300.

FULLY GUARANTEED.

**The Shelby Electric Co.**

Shelby, Ohio

**MORSE**  
**Automatic Lamp Adjuster,**

For Mills, Factories and  
Shops. Saves time, wear  
on cord and is approved  
by all experts.

**INCANDESCENT LAMP  
REPLACER  
AND CLEANER.**

Handles them at any height  
or angle.

**INCANDESCENT ELECTRIC  
LIGHT MANIPULATOR CO.**  
116 Bedford St.,  
BOSTON, MASS.



**W. H. JENKS,**  
**Electrical Contractor,**  
AND DEALER IN

ELECTRICAL SUPPLIES OF EVERY  
DESCRIPTION.

617 E. Main Street, Richmond, Va.

**J. S. BOGGS,**  
Troy, N. C.

Manufacturer of  
High Grade Yellow Pine CROSS ARMS.

Daily capacity, 2,500 Standard Ten-Foot Arms.  
Quick Shipments a specialty. Stock, 30,000 Arms.  
Special sizes to order. Give me a trial order.

**WHEN IN NEED OF**  
**Insulator Pins, Red Cedar or Chestnut**  
**Telephone Poles, or Red Cedar**  
**of Any Description,**  
—do not fail to correspond with—

**HOUSTON & LIGGETT,** Lewisburg, Tenn.

**SAML. J. SMITH & CO**

CHARLOTTE, N. C.

Every Lighting  
Plant, Textile  
Industry and

Factory  
Needs

Our Catalogue

## The Imperial Lighting System

(PATENTS PENDING)

**ECONOMICAL, BRILLIANT, DURABLE,**  
**RELIABLE AND SIMPLE TO OPERATE.**  
A Light equal to an Electric  
Arc at a very low cost.

The Imperial Lighting System is far superior to the Electric Arc, being softer, whiter, and absolutely steady. From a tank the gasoline is conveyed throughout an entire building through a flexible copper tube that can be put through crevices, around corners, and concealed the same as electric wires, and as many lights as may be desired can be supplied from the same tank. The Imperial System burns common stove gasoline, gives a 1,200 candle power light, and one gallon of gasoline burns 16 hours.

All Lamps are fully guaranteed, and are trimmed complete with full instructions as to installing and operating the system.

We also manufacture a complete line of Air and Gravity Pressure Lamps. Write for Illustrated Catalogue.

**The Imperial Gas Lamp Co.**

Sole Mfrs., 132-134 E. Lake St., CHICAGO, ILL., U. S. A.



**TOWER-BINFORD ELECTRIC & MFG. CO.**

MANUFACTURERS, CONTRACTORS AND DEALERS.

Catalogues, Prices and Estimates on Application.

RICHMOND, VA.

**CROCKER-WHEELER CO.**

Works and General Offices,  
AMPERE, N. J.



Y,

'S

L. Y.

tor,

ERY

d, Va.

RMS.

o Armi.  
o Armi.  
o Armi.  
order.

ostnet

ar

, Tern.

man

ile

and

1

1

1

1

1

1

1



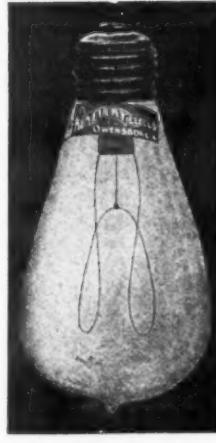
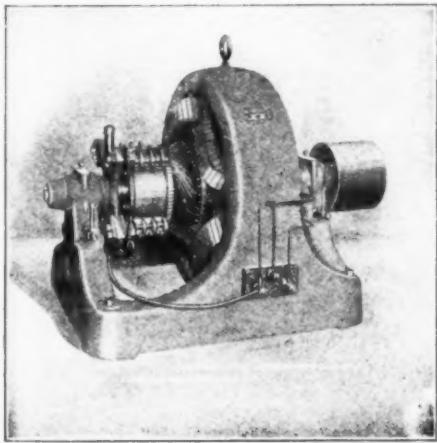


EIGHTH AND  
WILLOW STS.,  
PHILADELPHIA

**KITSON**

Hydro-Carbon Heating & Incandescent Lighting Co.

**KENTUCKY ELECTRICAL CO., Incorporated,**  
MANUFACTURERS OF  
**Incandescent Lamps, Motors and Dynamos.**  
OWENSBORO, KY.



Our goods are guaranteed, our shipments prompt. We do not belong to the combine. Write for prices.

**SMETHURST & ALLEN,**

NORTH AMERICAN BLDG.  
Broad Street below Chestnut Street,  
PHILADELPHIA, PA.  
Long Distance Telephone 4839.

Complete Electric Light and Power Installations. Electric Railway Work a Specialty.

W. A. SMETHURST  
RODNEY D. ALLEN

Electric Railway Contractors.

**DIETZ LANTERNS.**

Mill Lamps, Watchman's Lanterns, Street  
and Out-Door Lamps, Railroad  
Lamps and Lanterns.

R. E. DIETZ COMPANY, 25 Laight St., N.Y.  
SEND FOR CATALOG

**S. B. ALEXANDER, Jr. CO.,**  
CHARLOTTE, N. C.

We carry the largest stock of

**ELECTRIC SUPPLIES**  
carried in the south. Orders filled promptly.  
Write us for prices.

A Page From Our Catalogue of  
**ALL THINGS ELECTRICAL**  
Electrical Material Company, Baltimore.

181

MEDICAL APPARATUS.

No. 41.

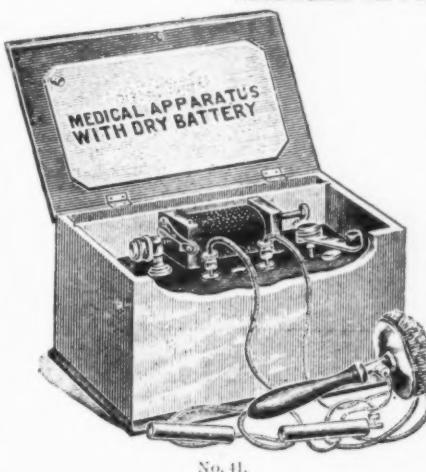
This Electro-Medical Apparatus is operated by one cell of dry battery, thus dispensing with acids, chemicals or liquids.

For doctor or patient this apparatus is the most convenient and reliable.

The entire absence of acids, liquids or salts will be appreciated by anyone who ever had occasion to use a medical battery. The strength of the various currents range from those which are so mild to the most powerful that can be endured by a strong man.

All metal parts are nickel plated, finely finished case, two conducting cords, two nickel plated electrodes, one rosewood handle, one sponge holder, one foot plate with each apparatus.

No. 41 Medical Apparatus, complete..... \$6.00  
Extra Dry Battery for above, each..... .50



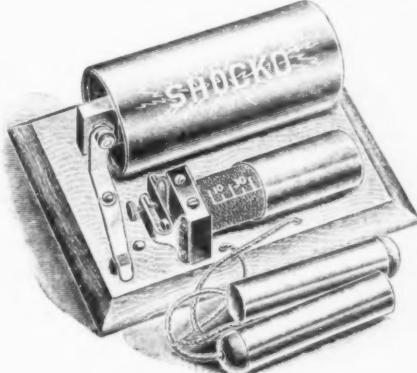
The Shocko.

To manufacture a coil so perfect and complete at this price has seemed impossible, but with perseverance, facilities and quantities have succeeded. The full current is overpowering, but can be regulated so that it will not harm the smallest child.

The application of medical coils in cases of nervous disorders, rheumatism, etc., are well known.

Shocko is especially made for use in these and kindred diseases, and easily manipulated by the patient at home without assistance by following directions. The mountings are finished in heavy nickel plate, has starting switch, vibrator fitted with adjusting thumb screw and silver contact points.

Price complete (by mail in U. S., 25c. additional)..... \$1.00  
Extra No. 3 cell (by mail in U. S., 15c. additional)..... .25



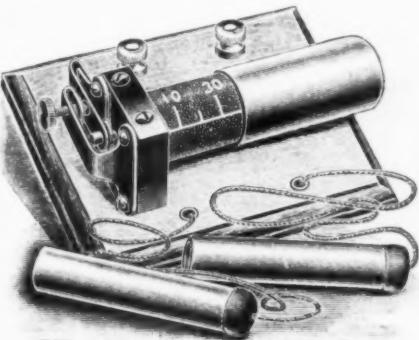
The Shocko, Jr.

Is a complete medical coil, mounted on a polished base, metal parts nickelized and all the features of a more expensive machine.

The full current will make a strong man dance or can be regulated at will so a child can hardly feel it.

In its scientific, instructive and experimental demonstrations is entertaining and many tricks can be sprung on a group that will create roars of laughter.

In cases of nervous disorders, rheumatism, gout, etc., is easily applied by the patient at home without assistance. Any dry or liquid cell that will operate any coil will operate Shocko, Jr. Price (by mail in U. S., 10c. additional)..... \$0.75  
Dry Cell No. 3 if desired (by mail in U. S., 15c. additional)..... .25



Special prices quoted and catalogue mailed upon request.

**ELECTRICAL MATERIAL CO.,**

Baltimore, Md.

**Western Electrical Supply Co.**

10 and 12 North 9th Street,  
ST. LOUIS, MO.

**"EVERYTHING ELECTRICAL"**

**Electrical Apparatus,  
Lighting Supplies,  
Electric and Combin-  
ation Fixtures, Line Material  
of Every Description.**

**Electrical Railway Supplies,  
Telephones, Switchboards  
and All Accessories, Annunciators,  
Bells, Pushes and  
General House Goods Supplies.**

Write Us for Catalogues, Prices, etc.

**Nickel Plating Outfits,  
POLISHING MACHINERY,  
CHEMICALS,  
DYNAMOS.**

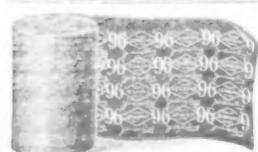
THE HANSON & VAN WINKLE CO.  
CHICAGO. NEWARK, N. J.  
ADDRESS DEPARTMENT "E"

## MANUFACTURERS' RECORD.

DIAMOND MACHINE CO., PROVIDENCE, R. I., U. S. A.

### Grinding and Polishing Machinery

THE LARGEST AND MOST COMPLETE LINE—1828 machines now in stock or nearing completion.



### Jenkins '96 Packing.

Pronounced by steam users throughout the world the best joint packing manufactured. Expensive? Not at all, as it weighs 30 per cent. less than many other packings, consequently is much cheaper.

JENKINS BROTHERS, New York, Boston, Philadelphia, Chicago.

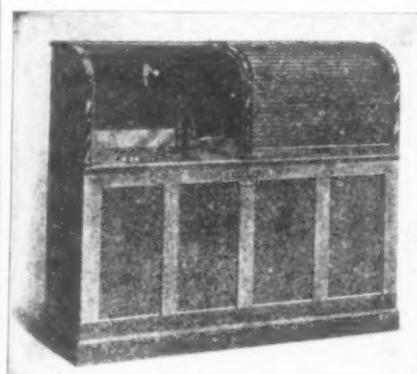
THE ALLINGTON & CURTIS DUST & SHAVINGS SYSTEM IS  
FREE PLANTS PRICE IT. OUR FREE CATALOGUE SHOWN WAY.

FREE ESTIMATES BY EXPERTS

FOR INFORMATION ABOUT  
**U. S. MAIL CHUTES**,  
WHICH ARE  
A NECESSITY IN OFFICE BUILDINGS AND HOTELS.  
Write to the sole makers,  
**THE CUTLER MFG. CO.**, Rochester, N. Y.  
PATENTED. AUTHORIZED.

THE BEST  
EXHAUST FANS  
& BLOW PIPING  
FURNACE  
FEEDERS  
"MORSE" CYCLONE DUST COLLECTORS  
MFD. BY THE ALLINGTON & CURTIS MFG. CO.  
SAGINAW, MICH.

### MODERN MANUFACTURING PLANTS



**BOWSER** ADJUSTABLE  
SELF-MEASURING PUMPS  
may be adjusted to fill any ordinary oil can or "oiler" at one stroke. We build a dozen styles of Shop Cabinets. Catalog "S" tells about them. It's FREE.  
S. F. BOWSER & CO., Fort Wayne, Ind.

SHOULD HAVE  
MODERN EQUIPMENT.

### THE BOWSER ADJUSTABLE MEASURE SELF-MEASURING

### Shop Oil Cabinet

is the LATEST and BEST APPARATUS upon the market.

### THE COMPARTMENT ROLL-TOP CABINET

shown herewith is an example—it keeps the oils clean and free from contamination by dirt and dust and prevents all loss from waste or leakage

AN ORNAMENT TO ANY  
ENGINE ROOM.

### ...TO MANUFACTURERS AND CAPITALISTS

Contemplating  
THE ESTABLISHMENT OF INDUSTRIAL ENTERPRISES.

Attention is called to the exceptionally favorable location of **NEWPORT NEWS, VA.**, on Hampton Roads, fifteen miles from the sea. Deep water, railway and sea transportation facilities unrivaled. Climate salubrious.

Apply to **C. B. ORCUTT, President,**  
Old Dominion Land Co. 1 Broadway, New York.

**H. STEVENS' SONS CO.**, Macon, Ga.

Manufacturers of

### Sewer and R. R. Culvert Pipe,

Fire Brick, Milled Clay Flue Pipe and Chimney  
Tops, Urns, &c. Correspondence Solicited.

Write J. R. WILLIAMS & CO., ARVONIA, VA., for prices on  
**BUCKINGHAM-VIRGINIA ROOFING SLATE**  
From the Celebrated "Old Nicholas" Quarries.

### DIXON'S SILICA GRAPHITE PAINT

FOR TIN OR SHINGLE ROOFS AND IRON WORK. Tin roofs well painted have not required repainting for 10 to 15 years.

If you need any paint it will pay you to send for circular.

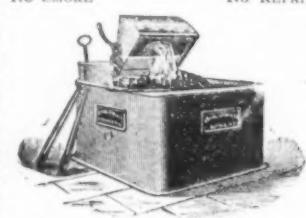
JOSEPH DIXON CRUCIBLE CO., Jersey City, N. J.



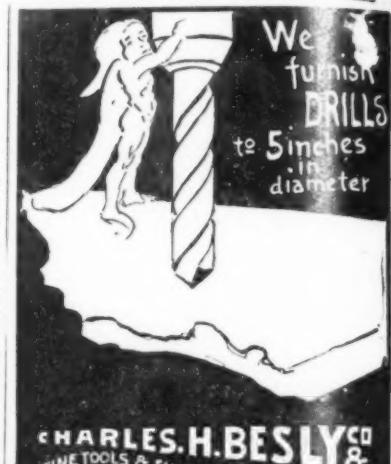
Main Office, St. Louis, Mo. Branches, 110 N. 3d St., Phila.; Revere Rub. Co., N. O.; Towne & Co., Memphis; Milner & Kettig Co., Birmingham, Ala.

### Buffalo Down Draft Forges

No Overhead Pipes  
No Smoke  
No Repairs



**Buffalo  
Forge Company**  
BUFFALO, N. Y.



1902

Emery, Emery Wheels,  
Grinding Machines,  
Buffing Lathes, Saw Gummars,  
Knife Grinders, Emery Planers,  
Surfacing Machines,  
Knife Sharpeners, Diamond Tools,  
Emery Whetstones.

**THE TANITE CO.**  
Stroudsburg, Pa.

### Sellers' Restarting Injector



A strictly first class machine at moderate cost.

Perfectly automatic, has wide range of capacities, and raises water promptly with hot or cold pipes.

Very simple, has few parts and is easily repaired.

All parts interchangeable, made of the best bronze, and the workmanship is perfect. Send for special catalogue descriptive of this Injector.

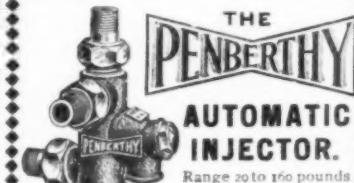
JENKINS BROTHERS, Selling Agents  
NEW YORK, BOSTON, PHILA., CHICAGO

### "WINNERS!"

Standard Ball-Bearing  
Philadelphia Casters.

Samples and Catalogues Free.  
STANDARD CASTER & WHEEL CO.  
318-326 E. 23d St., NEW YORK

### GOOD ALL ROUND.



Range 20 to 160 pounds

Steam. Lifts 20 feet.

Handles hot water up to 125 degrees.

Efficiency 99<sup>1/2</sup> Per Cent.

PENBERTHY INJECTOR CO., Detroit, Mich.  
Largest Injector Manufacturers in the World.

### Black Diamond File Works

Established 1863.

Twelve  
Medals  
Awarded at  
International  
Expositions.



Special  
Prize  
Gold  
Medal  
Atlanta, 1895.

Our Goods are on Sale in every leading Hardware Store  
in the United States and Canada.

**G. & H. BARNETT CO.**, Philadelphia, Pa.

E. E. KELLER,  
VICE-PRES.

GEO. WESTINGHOUSE,  
PRESIDENT.

A. G. HOLMES,  
MANAGER.

Pittsburg Meter Co.,

East Pittsburg, Pa.

### WATER METERS

THE STANDARD OF METER EFFICIENCY.